

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Northern District

WATERMASTER SERVICE IN NORTHERN CALIFORNIA


1983 Season

SEPTEMBER 1984

FOREWORD

This report describes the watermaster service provided by the Department of Water Resources to areas in northern California during the 1983 irrigation season. Authority for its preparation and publication is stated in the California Water Code, Division 2, Part 4, Chapter 7.

Information about the service is presented in two parts. The first gives general information about water rights, water supply service areas and watermaster duties; the second describes the sixteen active service areas, fourteen in the Department's Northern District and two in the Central District. Each of these sixteen sections gives information on the general area, the basis of watermaster service, water supply, method of distribution, 1983 distribution, and other information.


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INTRODUCTION

Purpose and Benefits

The main purpose of watermaster service is to distribute water according to established water rights. This is done by apportioning to the rightful users the available supplies, in streams that have had water right determinations.

Distribution of water in watermaster service areas is the lawful duty of the Department of Water Resources as directed in Part 4 of Division 2 of the California Water Code. Under watermaster service water right owners are assured that their rights are protected, without their having to take legal action against other users.

A major benefit of watermaster service to water users and the State is that court litigation and violent conflict, which in the past happened often, are now rare. Also, available supplies of water are better used, as waste is reduced through careful management.

Because both the water right owners and the State receive benefits from watermaster service, the costs of performing the service are shared. Effective January 1, 1985, the State general tax fund pays one-half of the cost of operating each service area and the water right owners in the service area pay the other half. Individual users' shares are determined in accordance with Article 3 of Chapter 7 of the above-mentioned Part 4 of Division 2 of the Water Code. This work is not done cheaply. It takes considerable public money to maintain skilled representatives in the field full-time during the dry months of the growing season, and at the same time have the necessary administrative and office support at the Department headquarters. Nevertheless, most clients find the benefits of fair, reliable, and comparatively worry-free distribution of water to be far superior to doing without the State watermaster service.

Determination of Water Rights

Many of the streams under State watermaster service have had their water rights defined by the courts under one of three adjudication procedures. These judgments establish each owner's rights in term of rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each owner's rights are ranked according to the rights of all other decreed owners. Under this system, all rights of any one priority must be fully satisfied before water can be diverted to holders of lower priority rights. The determinations of the courts are commonly called decrees.

Water rights decisions necessary for establishing watermaster service areas may be accomplished by "statutory adjudication", "court adjudication", or "court reference". There are also ways to establish rights that do not involve the courts except, usually, to grant their official "stamp of approval."

Non-Judicial Decisions

A permit or "license to appropriate" can be issued by the State Water Resources Control Board (SWRCB), or agreement can be reached by mutual consent of the water users involved.

Court Adjudication

A less extensive method of defining water rights is the "court adjudication" procedure. This type of adjudication results when two or more parties involved in a water rights dispute seek a solution to their problem under civil law. A decision handed down in such a civil action determines only the water rights of the parties involved in the action and therefore does not necessarily define all water rights on the stream. As a result, serious conflicts sometimes arise between decreed water right owners and persons claiming longer-standing riparian or appropriative rights that were not specified in the decree.

Court Reference

The "court reference" type of adjudication arises when a civil action, as discussed, is referred to the State Water Resources Control Board for a determination under authority contained in Sections 2000-2076 of the Water Code. The Board's report becomes the basis for the court's decision. As in court adjudications, a court referee determines only the water rights of the parties involved in the action.

Statutory Adjudications

The California Water Code (Sections 2500-2900) gives a procedure whereby water users of any stream may petition the SWRCB, Division of Water Rights, to make a legal determination of all water rights on that stream. If the Board finds that such a determination is in the best public interest, it proceeds with a legally binding decision. This results in a court decree that defines all water rights on the stream.

The number of decreed owners and amounts of water rights for each service area are shown on page 11. Table 1 lists Superior Court decrees and their types.

TABLE 1
SUPERIOR COURT DECREES REGULATING WATER DISTRIBUTION

Watermaster Service Area	Name of Stream System	County	Decree			Date Water- master Service Area Created	Remarks
			Number	Date	Type*		
Ash Creek	Ash Creek	Modoc ** and Lassen	3670	10-27-47	CR	4-03-59	Included as part of Big Valley service area 1949 through 1958.
Big Valley	Pit River	Modoc ** and Lassen	6395	2-17-59	S	11-13-34	Service provided in accordance with recorded agreement in 1934. Service area operated under recorded agreement 1935 through 1958, and under decree since 1959. Service discontinued on December 31, 1981.
Burney Creek	Burney Creek	Shasta	5111	1-30-26	CR	9-11-29	Service provided in accordance with decree since 1926.
Butte Creek	Butte Creek	Butte	18917	11-06-42	S	1-07-43	
Cow Creek	North Cow Creek	Shasta	5804	4-29-32	CR	10-17-32	
	Oak Run Creek	Shasta	5701	7-22-32	CR	10-17-32	
	Clover Creek	Shasta	6904	10-04-37	CR	1-21-38	
Digger Creek	Digger Creek	Shasta and Tehama **	2213	8-12-99	C	6-11-64	
			3214	5-27-13	C		
			3327	10-16-17	C		
			4570	2-24-27	C		
Fall River	Fall River	Shasta	6292	4-26-28	C	3-15-76	Service discontinued June 30, 1983.
Hat Creek	Hat Creek	Shasta	5724	5-14-24	CR	9-11-29	Service provided in accordance with decree since 1924.
			7858	10-07-35	CR		
Indian Creek	Indian Creek	Plumas	4185	5-19-50	S	2-19-51	
Middle Fork Feather River	Middle Fork Feather River	Plumas ** and Sierra	3095	1-22-40	S	3-29-40	
North Fork Cottonwood Cr.	North Fork Cottonwood Cr.	Shasta	5479	6-09-20	CR	9-11-29	Service provided intermittently in accordance with the decree since 1924.
North Fork Pit River	North Fork Pit River and all tributaries except Franklin Creek	Modoc	4074	12-14-39	S	12-18-39	All stream systems consolidated into North Fork Pit River service area 12-13-40.
		New Pine Creek	2821	6-14-32	CR	6-22-32	
		Davis Creek	2782	6-30-32	CR	7-13-32	
		Franklin Creek	3118	9-08-33	CR	9-14-33	
		Cottonwood Creek	2344	5-03-40	CR	12-13-40	
		Pine Creek	Agreement	11-22-33		1-12-35	
Scott River	French Creek	Siskiyou	14478	7-01-58	CR	11-19-68	French, Shackleford, and Wildcat Creek were combined in 1980 to form the Scott River service area. Sniktaw Creek was added on April 1, 1981.
	Shackleford Creek	Siskiyou	13775	4-10-50	S	11-06-50	
	Wildcat Creek	Siskiyou	30662	1-16-80	S	5-01-80	
	Sniktaw Creek	Siskiyou	30662	1-16-80	S	4-01-81	
Seiad Creek	Seiad Creek	Siskiyou	13774	4-10-50	S	11-06-50	Service provided in accordance with decree by order of the court in 1950. Service suspended in September 1964, then reactivated on April 1, 1981.
Shasta River	Shasta River	Siskiyou	7035	12-29-32	S	3-01-33	
	Willow Creek	Siskiyou	24482	6-22-72	C	7-01-72	
	Cold Creek	Siskiyou	29348	7-05-78	S	4-01-81	
Surprise Valley	Cedar Creek	Modoc	1206	5-22-01	C	9-11-29	All adjudicated stream systems in Surprise Valley were consolidated into the Surprise Valley service area on 1-10-39. Bidwell Creek was added on March 16, 1960. Service started on Cedar Creek in 1926 in accordance with the decree. Service was provided on Soldier and Owl Creeks in 1929 in accordance with the decrees by order of the court.
	Solidier Creek	Modoc	2343	2-15-23	C		
	Owl Creek	Modoc	2405	11-28-28	CR	9-11-29	
	Emerson Creek	Modoc	2410	4-29-29	CR	9-11-29	
	Mill Creek	Modoc	2840	3-25-30	CR	4-02-03	
	Deer Creek	Modoc	3024	12-19-31	CR	12-30-31	
	Pine Creek	Modoc	3101	1-25-34	CR	12-29-34	
	Rader Creek	Modoc	3391	12-07-36	CR	1-13-37	
	Eagle Creek	Modoc	3626	6-04-37	CR	6-12-37	
			2304	4-05-26	C	1-10-39	
			3284	11-05-37	CR		
	Bidwell Creek	Modoc	6420	1-13-60	S	3-16-60	
Susan River	Susan River	Lassen	4573	4-18-40	CR	11-10-41	
	Baxter Creek	Lassen	8174	12-15-55	S	2-16-56	
	Parker Creek	Lassen	8175	12-15-55	S	2-16-56	

* Explanation of type of decree:

C - Court adjudication (court makes determination from evidence submitted--no report of referee)

CR - Court reference (referred to State Water Resources Control Board for investigation and report)

S - Statutory adjudication (State Water Resources Control Board is petitioned by water users to make a determination of all water rights on a stream system)

** Decree entered by the Superior Court of this county

Watermaster Service Areas

Formation

Watermaster service is provided in areas where the rights have been defined by the superior court of the county, or by agreement, and where an unbiased qualified person is needed to properly apportion the available water according to the established rights. The Director of the Department of Water Resources creates watermaster service areas where these conditions exist, following either a request by the users or an order by the superior court.

The first watermaster service areas were created in September 1929. Before then, some watermaster service was provided in accordance with the Water Commission Act of 1913. There are now about 50 streams in Northern California that are under State watermaster service. The newest service areas were created in 1979.

The counties and principal water sources of the various service areas in Northern California are listed in Table 2.

Of these sixteen areas, fourteen are in the Department's Northern District and two are in the Central District.

Description of Region

The service areas are mainly in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although much land is used exclusively for pasturing livestock. Most irrigation is done by gravity systems, with water users diverting directly from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas. A map of this region showing the sixteen service areas is presented on page 11.

TABLE 2

WATERMASTER SERVICE AREAS AND STREAM SYSTEMS

Service Area	County	Principal Water Sources	
		MAJOR STREAM and tributaries ^{a/}	Reservoirs and Nontributary Streams
Ash Creek	Lassen, Modoc	ASH CREEK	
Burney Creek	Shasta	BURNEY CREEK	
Butte Creek	Butte	BUTTE CREEK	West Branch Feather River
Cow Creek	Shasta	COW CREEK ^{b/} North Cow, Clover, Oak Run Creeks	
Digger Creek	Shasta, Tehama	DIGGER CREEK	
Fall River	Shasta	FALL RIVER	
Hat Creek	Shasta	HAT CREEK	
Indian Creek	Plumas	INDIAN CREEK Lights Creek, Wold Creek	
Middle Fork Feather River	Plumas, Sierra	MIDDLE FORK FEATHER RIVER Little Last Chance, Smithneck, Webber and Fletcher Creeks; Spring Channels; Westside Canal	Little Truckee River
North Fork Cottonwood Creek	Shasta	NORTH FORK COTTONWOOD CREEK	Rainbow Lake
North Fork Pit River	Modoc	NORTH FORK PIT RIVER Parker Creek	Pine, Cottonwood, Davis, and New Pine Creeks
Scott River	Siskiyou	FRENCH CREEK Shackleford, Mill, Miners, Wildcat Creeks	Cliff and Campbell Lakes
Seiad Creek	Siskiyou	SEIAD CREEK	Canyon Creek
Shasta River	Siskiyou	SHASTA RIVER Little Shasta River	Dwinnell Reservoir (Lake Shastina), Cold Creek, Willow Creek
Surprise Valley	Modoc	NONE (All creeks listed at right are unconnected)	Bidwell, Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, Eagle, Emerson Creeks
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks

^{a/} Major tributaries only; a complete listing is given in "Index to Water Sources", page vi.

^{b/} Mainstem Cow Creek not in service area.

Watermaster Responsibilities

Authority

To assure the proper distribution of water within his service area, each watermaster must ascertain the amount of water available and distribute it both by amount and priority according to established water rights.

To accomplish this, the watermaster gets his authority both from Water Code and from provisions of pertinent court decrees or voluntary agreements to physically regulate the streams in the service area. He is further authorized to supervise the design, construction, operation, and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervises water distribution at around 100 to 200 diversions in one or more service areas. The need for frequently checking and regulating these diversions points increases substantially in years of short water supply.

Control Devices

Permanent measurement and control devices which the State requires (Water Code Sections 4100-4104) at each owner's main point of diversion are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service, since once they are built, conflicts among water users usually stop. Also, the watermaster's ability to check and set each diversion regularly is greatly helped by good structures.

Interpretation of Decrees

The watermaster is often called upon to make on-the-spot interpretations of various court decrees, agreements, etc. Since most of these documents were written more than 30 years ago, many situations have developed that were not initially considered. Therefore, the watermaster must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this, he must possess a good understanding of California water rights law.

Water Supply

Sources

Water supply in the watermaster service areas comes mainly from unregulated runoff of small streams. Peak runoff--snowmelt in most cases--occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and ground water pumping are used in some areas to supplement natural streamflow, but State watermasters do not supervise the use of ground water in this part of the State.

In some service areas the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the manpower needed. The Department's Bulletin 120 series, "Water Conditions in California", is used to assist in these predictions.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs normally in April, May, and June. Spring storms, which are normally accompanied by relatively cool temperatures, materially affect both the water supply and the demand. Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Table 3 reports the quantity of precipitation at selected stations in the service areas during the 1982-83 water year. The seasonal precipitation gives an indication of the related water supply available for distribution, and provides a basis for comparing the current year's supply with a long-term average.

TABLE 3

PRECIPITATION AT SELECTED STATIONS - 1982-83 SEASON

Station	County													Total	Percent of Mean
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept		
Fort Jones R.S.	Sisk.	<u>3.16</u> 1.62	<u>3.75</u> 3.02	<u>7.86</u> 4.37	<u>2.11</u> 4.77	<u>4.81</u> 2.79	<u>5.51</u> 2.00	<u>.94</u> 1.08	<u>.52</u> .76	<u>.00</u> .78	<u>.03</u> .34	<u>3.61</u> .49	<u>.82</u> .65	<u>33.12</u> 22.67	146
Happy Camp R.S.	Sisk.	<u>7.84</u> 4.33	<u>7.71</u> 8.52	<u>19.12</u> 11.24	<u>9.89</u> 12.18	<u>17.61</u> 7.78	<u>15.65</u> 6.51	<u>2.26</u> 2.78	<u>.90</u> 1.45	<u>.25</u> .61	<u>.61</u> .25	<u>4.33</u> .54	<u>.61</u> 1.09	<u>86.78</u> 57.28	152
Yreka	Sisk.	<u>1.95</u> 1.48	<u>2.59</u> 2.38	<u>7.00</u> 3.92	<u>1.15</u> 3.68	<u>4.55</u> 2.17	<u>4.26</u> 1.80	<u>.39</u> .89	<u>.48</u> .77	<u>.17</u> .85	<u>.17</u> .40	<u>1.89</u> .63	<u>.45</u> .59	<u>25.05</u> 19.56	128
Redding Fire Station #4	Shasta	<u>3.32</u> 2.22*	<u>6.25</u> 4.55*	<u>7.25</u> 6.68*	<u>9.37</u> 8.51*	<u>14.85</u> 6.19*	<u>17.47</u> 4.96*	<u>5.06</u> 2.82*	<u>1.36</u> 1.28*	<u>.62</u> .83*	<u>.08</u> .18*	<u>.53</u> .51*	<u>1.86</u> 1.05*	<u>68.02</u> 39.78*	171
Hat Creek P.H. #1	Shasta	<u>1.67</u> 1.30	<u>3.47</u> 2.19	<u>3.41</u> 3.28	<u>3.86</u> 3.24	<u>4.63</u> 2.53	<u>5.40</u> 2.09	<u>1.69</u> 1.22	<u>.33</u> 1.22	<u>.46</u> .89	<u>.00</u> .21	<u>1.42</u> .37	<u>.63</u> .56	<u>26.97</u> 19.10	141
Lookout 3WSW	Lassen	<u>3.66</u> 1.48	<u>4.32</u> 3.26	<u>5.37</u> 3.93	<u>2.06</u> 3.88	<u>5.42</u> 2.55	<u>4.52</u> 2.36	<u>1.38</u> 1.48	<u>.50</u> 1.09	<u>.31</u> 1.11	<u>.03</u> .29	<u>.71</u> .53	<u>.57</u> .78	<u>28.85</u> 22.74	127
Alturas R.S.	Modoc	<u>1.84</u> 1.09	<u>1.55</u> 1.52	<u>1.44</u> 1.65	<u>.80</u> 2.45	<u>1.96</u> 1.23	<u>2.86</u> 1.25	<u>1.63</u> 1.00	<u>1.95</u> 1.21	<u>.23</u> 1.09	<u>.00</u> .31	<u>.86</u> .43	<u>.71</u> .48	<u>15.83</u> 13.71	115
Jess Valley	Modoc	<u>2.67</u> 1.37	<u>2.00</u> 1.91	<u>1.70</u> 2.05	<u>1.32</u> 1.99	<u>1.62</u> 1.67	<u>4.25</u> 1.82	<u>2.21</u> 1.80	<u>1.64</u> 2.04	<u>-</u> 1.93	<u>.25</u> .48	<u>2.41</u> .64	<u>.36</u> .73	<u>-</u> 18.43	-
Cedarville	Modoc	<u>1.35</u> 1.27	<u>1.41</u> 1.69	<u>1.59</u> 2.77	<u>.42</u> 2.02	<u>1.82</u> 1.36	<u>2.85</u> 1.33	<u>1.20</u> 1.02	<u>.34</u> 1.11	<u>.31</u> .83	<u>.21</u> .37	<u>1.15</u> .38	<u>.60</u> .48	<u>13.25</u> 14.62	91
Susanville Airport	Lassen	<u>3.05</u> 1.15	<u>2.71</u> 1.70	<u>1.46</u> 2.64	<u>3.11</u> 2.88	<u>4.19</u> 1.93	<u>2.98</u> 1.38	<u>1.37</u> .64	<u>.24</u> .75	<u>.43</u> .67	<u>.00</u> .30	<u>.82</u> .22	<u>.74</u> .36	<u>21.10</u> 14.62	144
Greenville R.S.	Plumas	<u>6.48</u> 2.65	<u>8.03</u> 5.17	<u>8.52</u> 6.64	<u>9.90</u> 7.62	<u>16.47</u> 6.23	<u>12.57</u> 5.27	<u>4.50</u> 2.88	<u>1.22</u> 1.55	<u>.31</u> .80	<u>.01</u> .26	<u>1.59</u> .41	<u>1.11</u> .64	<u>70.71</u> 40.12	176
Sierraville R.S.	Sierra	<u>4.74</u> 2.14	<u>6.13</u> 3.62	<u>7.25</u> 4.89	<u>6.15</u> 5.46	<u>6.38</u> 3.75	<u>8.50</u> 2.90	<u>2.70</u> 1.56	<u>.60</u> 1.35	<u>.60</u> .60	<u>.00</u> .32	<u>1.47</u> .42	<u>1.53</u> .52	<u>46.05</u> 27.53	167
Vinton	Plumas	<u>3.04</u> .97	<u>2.95</u> 1.67	<u>3.22</u> 2.23	<u>3.14</u> 2.45	<u>4.27</u> 1.67	<u>3.61</u> 1.34	<u>1.88</u> .90	<u>.19</u> .97	<u>1.47</u> .72	<u>.00</u> .31	<u>1.31</u> .24	<u>1.57</u> .28	<u>26.65</u> 13.75	194

* Long-term average at Redding F.S. #2

NOTE: Figures above line are current season; Below line are long-term averages.

Data collected at representative snow courses showing the snowpack as of April 1, 1983, on all courses and the snowpack on May 1 at selected courses, are presented in Table 4. This information comes from the Department's basic data files.

TABLE 4

SNOWPACK AS OF APRIL 1 AND MAY 1, 1983, AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas	Snow Course Group Related to Each Service Area	Elevation (in feet)	WATER CONTENT OF SNOW				
			April 1 Average (in inches)	April 1, 1982***		May 1, 1982	
				In inches	In Percent of April 1 Average	In inches	In Percent of April 1 Average
Ash Creek	Blue Lake	6,800	12.6	58.8	165		
Big Valley	Eagle Peak	7,200	15.9	76.7	180		
Burney Creek	Thousand Lakes	6,500	38.1	151.5	89	140.0	92
Butte Creek	Humbug Summit	4,850	12.1	60.6	206	41.6	159
	Silver Lake Meadows	6,450	30.5	138.0	220	108.6	189
Cow Creek	New Manzanita Lake	5,900	8.1	55.2	189	41.1	223
Digger Creek	Burney Springs	4,700	2.8	7.6	90		
Hat Creek							
Indian Creek	Independence Lake	8,450	41.3	179.0	115	184.0	186
Middle Fork Feather River	Mount Dyer No. 1	7,100	25.5	131.1	227	149.6	225
	Rowland Creek	6,700	18.5	90.6	187	86.6	188
	Yuba Pass	6,700	31.9	141.3	176	136.7	196
North Fork Pit River	Cedar Pass	7,100	17.2	48.7	103		
Scott River	Parks Creek	6,700	36.6	178.0	108		
Scott River	Middle Boulder No. 1	6,600	31.5	157.9	232	34.3	111
Shasta River	Little Shasta	6,200	20.6	82.2	144		
South Fork Pit River	Adin Mountain	6,350	13.6	68.3	136	51.8	176
Surprise Valley							
Susan River	Fredonyer Pass No. 1	5,750	8.7	52.2	172	0.0	

* Snow courses are listed in order of elevation with each geographical group of watermaster areas.

** Data collected only at stations listed.

Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by the U. S. Geological Survey as part of a Federal-State program for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by the watermaster in selected diversion ditches to further assist him in proper distribution of the various water right allotments.

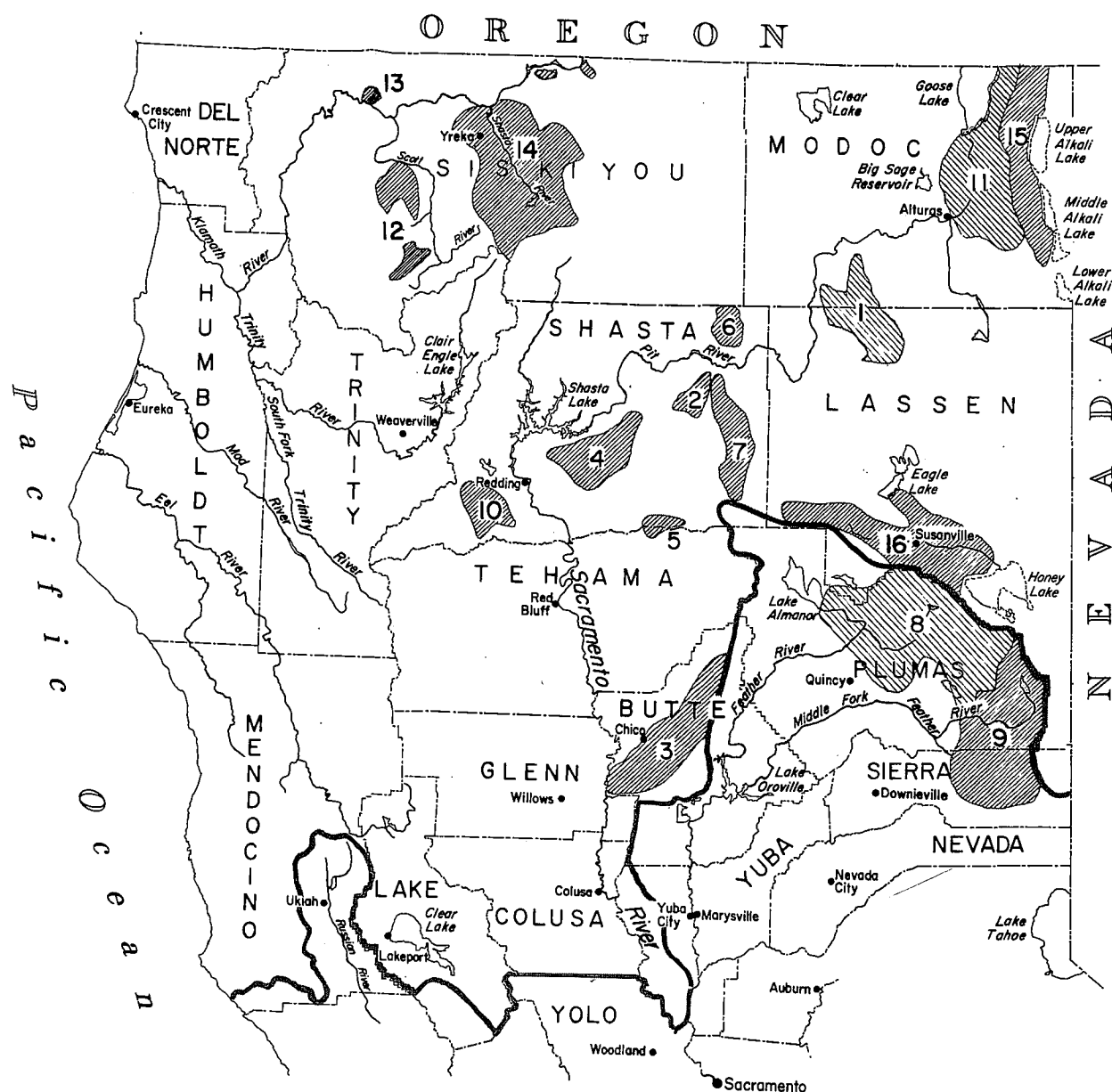
Table 5 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 5
RUNOFF, SELECTED STATIONS - 1962-83 (ACRE-FEET)

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	<u>1/</u> Average	Percent of Average
Shasta River near Yreka	10970	12630	22820	23520	37300	58190	24810	18920	17520	6470	5620	6940	245,700	137,700	178
Hat Creek near Hat Creek	10500	9880	9510	9500	8940	10780	9990	12580	19780	16280	12060	10070	139,900	102,200	137
South Fork Pit River near Likely	2310	1440	1120	1670	1940	2700	4640	27170	33790	12220	11760	7730	108,500	57,890	187
Susan River at Susanville	1860	2660	3910	6900	11230	27510	15900	44460	22960	4790	6240	2310	150,700	71,220	212
Butte Creek near Chico	12140	23750	45380	60540	102000	154800	58810	56090	39670	19710	13610	9960	596,400	302,100	197

1/ Long-term average.

Figure 1



WATERMASTER SERVICE AREAS

Table 6
1983 DECREEED WATER RIGHTS

Service Area	Number of Decreed Water Users	Total Decreed Water Rights ft ³ s
1. Ash Creek	59	123.85
2. Burney Creek	11	33.09
3. Butte Creek	40	422.30
4. Cow Creek	86	56.367
5. Digger Creek	79	23.225
6. Fall River	2 1/	2/
7. Hat Creek	57	135.545
8. Indian Creek	47	96.715
9. M.F. Feather River	105	372.079
10. N.F. Cottonwood Creek	13	30.30
11. N.F. Pit River	101	214.195
12. Scott River	83	102.04
13. Seiad Creek	27	6.82
14. Shasta River	164	620.422 3/
15. Surprise Valley	174	334.02
16. Susan River	204	352.182

1/ Does not include Pacific Gas and Electric Company, which is a participant.

2/ Discontinued June 30, 1983.

3/ Includes Willow Creek near Ager which is based on percentage of flow.

This portion of the report consists of 16 sections, one for each service area active in 1983, presented in alphabetical order.

Each of these sections begins with a description of the particular service area, including location, geography, and general characteristics. Following this is a section entitled "Basis of Service". Under this heading are presented such data as the case number, date, and type of decrees; a brief summary of the decree or agreement that defines the water rights; the date the service area was created, and other related information.

These sections of the report also give data on the water supply, methods of distribution, significant events of the watermaster season, and daily streamflow records. A map of the stream system, including diversion locations, roads, etc., is also included for each service area.

A noticeable trend in recent years is the increasing number of water right owners in many areas, due to subdividing or "splitting" of property. This trend not only causes more work for the individual watermasters, but makes it difficult to maintain up-to-date records of all ownerships and their respective water rights. The water right ownerships are updated as of March 1 each year from County Assessors' records. Changes not on record by March 1 are therefore not reflected on the service area maps included in the various sections.

Since the purpose of this publication is to report the activities of the watermaster service, and because of the difficulty in keeping the data current, nothing herein should be construed as a determination of water rights. Furthermore, in some service areas there are diversions which may have been active but are not shown on the maps because they did not require the watermaster's attention during 1983.

As in previous years, watermaster service was begun on different dates in the various areas depending upon the streamflow conditions, the ranchers' needs for the water, or, as on some streams, the terms of the decree. Service was continued in all areas through the growing season as long as needed.

The date service was started in each service area and the name of the watermaster in charge are listed on page 14.

TABLE 7
START-UP DATES AND WATERMASTERS

<u>Service Area</u>	<u>Date Service Began in 1983</u>	<u>Watermaster</u>
Ash Creek	May 1	C. Donald Hand
Burney Creek	June 1	C. Donald Hand
Butte Creek	April 1	Kenneth E. Morgan
Cow Creek	May 1	C. Donald Hand
Digger Creek	June 6	Kenneth E. Morgan
Fall River**	March 15	C. Donald Hand
Hat Creek	May 1	C. Donald Hand
Indian Creek*	May 1	Jon A. Haman
M. F. Feather River*	March 15	Joe Nessler Conrad Lahr
N. F. Cottonwood Creek	June 1	Kenneth E. Morgan
N. F. Pit River	April 1	Charles G. Hodge
Scott River	April 1	Lester L. Lighthall Kenneth E. Morgan
Seiad Creek	April 1	Lester L. Lighthall Kenneth E. Morgan
Shasta River	April 1	Lester L. Lighthall
Surprise Valley	March 19	Keithal B. Dick
Susan River	March 1	Virgil D. Buechler

* Within Central District; all others in Northern District

** Service Discontinued June 30, 1983

ASH CREEK WATERMASTER SERVICE AREA

The Ash Creek service area is in Modoc and Lassen Counties near the town of Adin, about 100 miles northeast of Redding via Highway 299. Figure 2, page 19, shows the Ash Creek stream system and diversions, and the roads in the area.

The major sources of water for the service area are Ash Creek and three tributaries, Willow, Rush and Butte Creeks. Ash Creek rises in Ash Valley in the southeastern part of the service area and flows northwesterly about 18 miles to its confluence with Rush Creek, then southwesterly to the town of Adin, and then westerly to Ash Creek Swamp and the Pit River. Butte and Willow Creeks head in the mountains to the east and flow northwesterly into Big Valley. Butte Creek meets Ash Creek near the head of the Valley at Adin. It meets Willow Creek about 3 miles farther west, near the head of Ash Creek Swamp. The valley floor elevation in this vicinity is about 4,200 feet.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 3670, Modoc County Superior Court, dated October 27, 1947. From 1949 through 1958, Ash Creek was included as a part of Big Valley watermaster service area (no longer served). It has been served separately since April 3, 1959.

About 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The rest are along the upstream tributaries and in Ash Valley, east of Adin. The part of Big Valley served is about 10 miles long by 6 miles wide, extending from Adin to the confluence of Ash Creek and the Pit River.

The Ash Creek decree establishes the number of priority classes on the individual streams within the service area as follows: Ash Creek, five; Willow Creek, four; Rush Creek, one; and Butte Creek, two. Each of these streams is independently regulated.

Water Supply

The water supply for Ash and Rush Creeks comes mainly from snowmelt, since most of the watershed is between 5,000 and 6,000 feet in elevation. Willow Creek and Butte Creek get much of their water from springs. These creeks normally have enough water to satisfy demands until about June 1, after which the supply decreases rapidly. By the end of June, Ash Creek normally has receded to about 20 cubic feet per second (cfs), and Butte Creek to less than 1 cfs. The flow of these creeks then remains nearly constant for the rest of the season.

Method of Distribution

Irrigation from Ash Creek and its tributaries uses numerous small dams to divert flow into systems of ditches. The ditches deliver the water to the various fields for spreading. Wild flooding is the method most used, but some ranchers have checks and ditches and some use pumps to operate sprinklers or to

lift water to higher spreading ditches. In some cases, runoff water is captured and reused before it returns to the stream.

1983 Distribution

Watermaster service began May 1 and continued until September 30 with Donald Hand, Water Resources Engineering Associate, as watermaster.

Ash Creek

The supply was above or equal to the demand through May but dropped off rapidly in early June. The Megarel Drilling Company property was leased out this season, and the lessee was under the mistaken impression that they would get 100 percent of their water right, or 74.6 cfs. This error was corrected, and a small percentage of first priority rights was filled through September.

Willow Creek

The flow met all priorities until early May when fourth priorities were cut off. Supply continued to drop until only first priorities and a small percentage of seconds were filled.

Butte Creek

Both priorities were filled until May. Only part of first priority was filled after that.

ASH CREEK WATERMASTER SERVICE AREA

1983 Daily Mean Discharge
(In Cubic Feet Per Second)

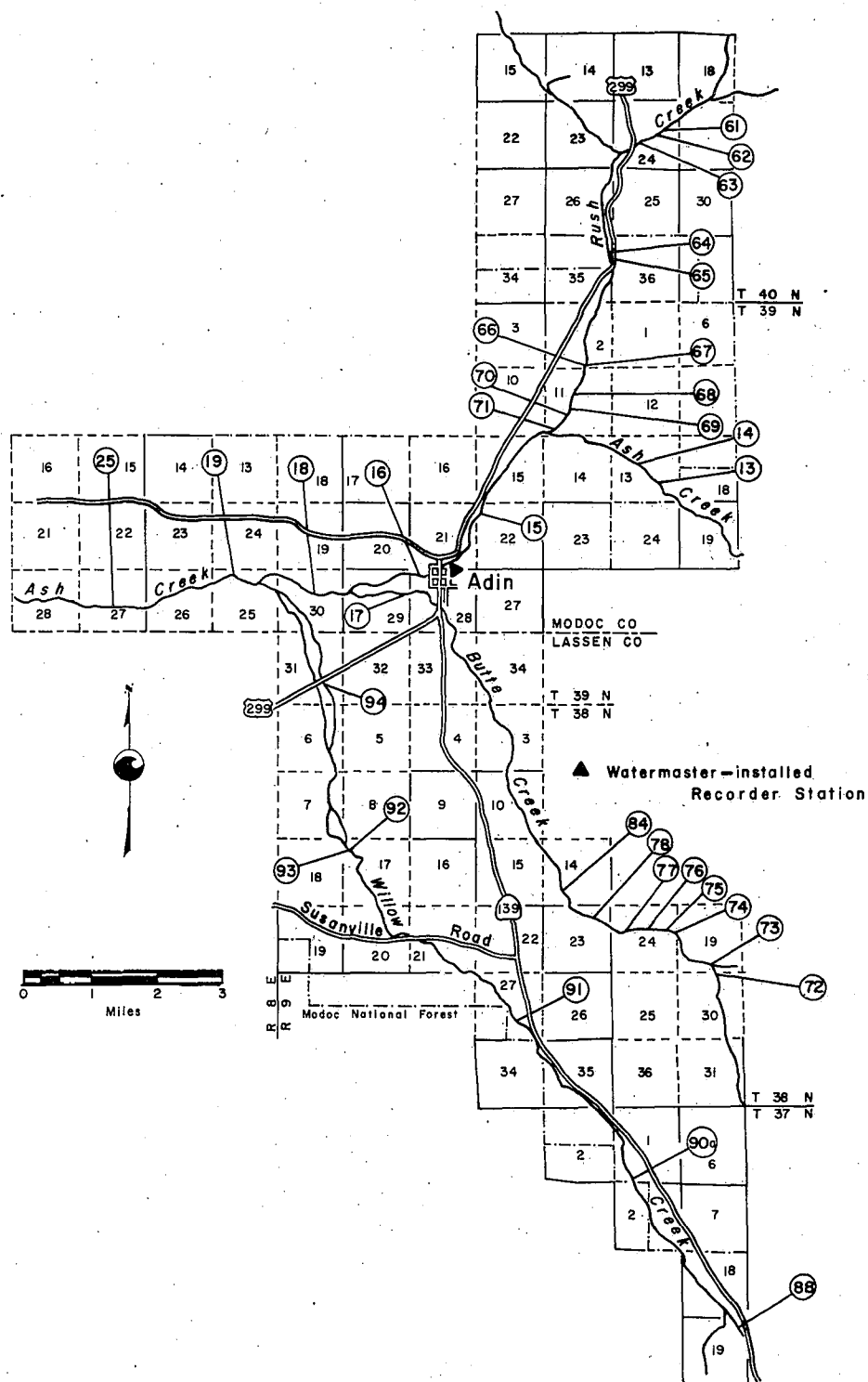
TABLE 8

ASH CREEK AT ADIN								
DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	433	624	624	224	26	21	29	1
2	457	685	516	203	31	21	28	2
3	380	512	365	174	30	22	28	3
4	321	425	343	163	27	27	27	4
5	293	346	362	133	25	24	22	5
6	269	297	442	116	23	23	17	6
7	258	283	361	101	22	25	21	7
8	244	274	308	80	20	28	23	8
9	240	272	295	60	22	23	24	9
10	258	286	282	61	22	24	26	10
11	830	278	271	86	21	25	26	11
12	656	283	262	62	20	25	26	12
13	1580	272	255	51	20	25	25	13
14	1160	260	253	44	21	28	22	14
15	777	242	253	41	22	26	20	15
16	529	242	251	38	23	27	23	16
17	382	241	249	34	23	27	24	17
18	326	240	252	32	23	25	24	18
19	289	252	257	38	23	28	25	19
20	269	276	264	34	22	29	25	20
21	289	358	267	39	21	31	25	21
22	296	329	271	36	19	30	24	22
23	288	323	278	31	19	28	24	23
24	282	313	282	29	20	28	22	24
25	297	313	281	28	21	28	19	25
26	282	309	275	26	23	27	19	26
27	324	290	269	27	33	27	23	27
28	328	277	259	28	33	28	24	28
29	323	275	257	22	25	26	22	29
30	635	270	253	22	23	26	26	30
31	1040	0	236	0	21	28	0	31
MEAN	462	322	304	69	23	26	24	MEAN
AC-FT	28430	19130	18670	4090	1440	1610	1410	AC-FT

TABLE 9
DIVERSIONS FROM ASH, RUSH, BUTTE, AND WILLOW CREEKS
Ash Creek

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
7-10a	Bath, John	4.15
10	Bath, Fred	3.50
9	Akers Land & Cattle Co.	2.00
11	Downey, Paul	3.90
15	Wilson, David	0.45
	Nor-Cal Land & Cattle Co.	0.35
17	Mosely, Chas.	0.35
18	Chesley, Robert	2.18
13	Weigand, S.	4.23
13	Venaldes	0.12
13	Shevlin & Postula	0.45
17-18	Bower, Guy	1.18
	Smith, E. T.	0.40
	Reed, D. F.	0.60
	Moorhouse, R. F.	0.61
	McDonald Robert	0.05
	Nance, John	0.43
19-25	Megargel Drilling Co.	74.60
	Thompson, Robert	0.20
	Thompson, Melvin	0.10
	D.V.A.	0.10
25	Gerig, Norris	2.50
<u>Rush Creek</u>		
61-62	Scudero	0.18
63	Cantrell, Lloyd	0.12
63	Stevenson	0.30
	Nash, Roy	0.30
64-65	Reed, Donald	1.05
64	Tyrell	0.25
66	Papandrea, George	0.85
66	Reed, Donald	2.20
<u>Butte Creek</u>		
72-73	Landway Corp.	0.40
74-76	Haury	1.60
75-78	Lenke, Lester	0.04
	Dunn et al	0.19
	Ramming, James	0.04
84	Schmidt	1.00
75-78	Forby, James	0.13
<u>Willow Creek</u>		
88	Parks	0.85
90a	Hurst, Dan	0.10
	Moorhouse, Richard	0.04
	K.F.B-Partnership	0.18
	Kamiya, Tadao	0.04
	McIlucen, William	0.23
	Kennet, Fred	0.06
	Westover, Victor	0.07
	Wask, Frank	0.08
91	Armstrong	0.50
92	Frosty Acres	3.90
92	Weigand	3.20
93-94	Hunt	3.20

Figure 2



DIVERSIONS FROM ASH CREEK WATERMASTER SERVICE AREA

BURNEY CREEK WATERMASTER SERVICE AREA

The Burney Creek service area is in eastern Shasta County above and below the town of Burney. Figure 3, page 23, shows the Burney Creek stream system, including the diversions and roads.

The source of water for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The part of the valley served by this stream is about 11 miles long and 2 miles wide and extends both north and south of Burney.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 5111, Shasta County Superior Court, dated January 30, 1926. Watermaster service was provided on the creek from 1926 to 1929 under the old Water Commission Act. The present service area was created on September 11, 1929.

The Burney Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz Ditch is distributed according to supplemental court decrees.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 4,000 and 7,500 on the northeast slopes of Burney Mountain. The creek normally has enough water for all demands until about the middle of June. The supply then gradually decreases until the end of July. For the rest of the irrigation season, runoff from perennial springs keeps the flow nearly constant at about 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 11, page 24. The stream gaging station on Burney Creek is downstream from four points of diversion, so the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from Burney Creek, in most cases, by means of low diversion dams into ditches that convey it to the place of use. Lateral ditches are then used to irrigate the land.

1983 Distribution

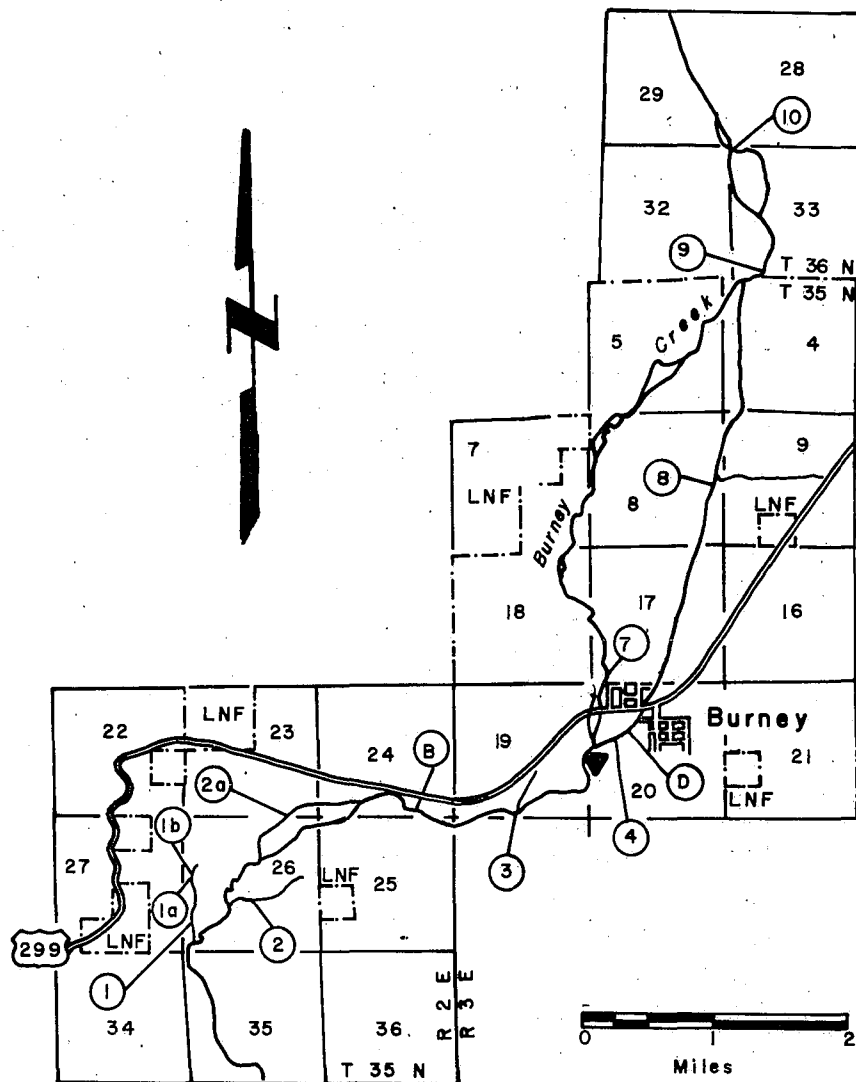
Watermaster service began June 1 and ended on September 30, 1983. Don Hand, Water Resources Engineering Associate, was the watermaster.

One hundred percent of allotments was maintained through mid-July. The flows gradually dropped to about 65 percent and held at this level for the rest of the season.

TABLE 10
DIVERSIONS FROM BURNEY CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1)		
2)	Whitmire	5.88
2a)		
1a)	Whitmire	0.75
1b)	Whitmire	0.20
3	Snooks	0.375
4	Geer - Cornez Ditch	12.34
7	Hathaway	12.34
8	Estes	4.895
	Cook	0.685
	Nachreiwer	1.73
9	H. C. Ranch	0.50
10	Pierpont	5.85
B	Publishers Forest Products (pump)	0.15
D	Tyler	0.11

Figure 3



▲ Permanent recorder station DWR Burney Creek near Burney

DIVERSIONS FROM BURNEY CREEK WATERMASTER SERVICE AREA

BURNEY CREEK WATERMASTER SERVICE AREA

1983 Daily Mean Discharge
(In Cubic Feet Per Second)

TABLE 11

DAY	BURNEY CREEK NEAR BURNEY					
	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	439	193	232	75	31	32
2	410	186	201	101	31	28
3	324	177	186	82	31	27
4	273	173	194	73	30	27
5	245	181	195	68	29	26
6	219	190	178	62	27	25
7	202	184	171	59	25	25
8	195	174	168	58	26	25
9	194	168	164	56	26	25
10	196	161	176	53	27	25
11	190	157	189	51	28	24
12	182	154	158	49	28	24
13	166	153	139	47	28	24
14	155	153	131	46	28	24
15	143	153	123	44	26	24
16	130	151	116	43	26	23
17	136	151	113	42	27	21
18	142	151	106	42	27	21
19	154	153	97	40	30	21
20	176	159	94	39	30	21
21	189	169	91	35	30	22
22	189	180	87	35	32	26
23	184	194	86	35	32	35
24	191	210	81	35	30	26
25	191	215	78	35	29	25
26	188	220	76	35	28	25
27	185	224	74	34	28	25
28	189	228	70	33	27	25
29	203	235	69	32	26	25
30	199	237	68	33	26	26
31	---	236	---	32	26	---
MEAN	206	183	130	49	28	25
AC-FT	12260	11250	7760	2980	1740	1490

BUTTE CREEK WATERMASTER SERVICE AREA

The Butte Creek service area is in Butte County a few miles southeast of the City of Chico. The watermaster service area runs about 11 miles along Butte Creek, starting about 4 miles east of Chico and running downstream to the crossing of the Western Canal. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet. Figure 4, page 27 is a map of the Butte Creek stream system.

Basis of Service

The rights on this stream system were determined by a statutory adjudication and set forth in Decree No. 18917, Butte County Superior Court, dated November 6, 1942. The Butte Creek watermaster service area was created on January 7, 1943.

The Butte Creek decree established three priority classes for summer use under Schedule 7, a surplus class inferior to the above rights, and a special class for Hamlin Slough. Schedule 3 of the decree defines the rights for redistribution (Diversion 50) of foreign water delivered into Butte Creek from the West Branch of the Feather River.

On September 18, 1969, the Water Resources Control Board granted permits for the following applications to take water from Butte Creek: application 22321, Gorriall Land Company; 22534, Garrison Patrick; and 22564, Louis C. Camenzind, Jr. These appropriative rights are also under control of the watermaster.

Water Supply

Butte Creek, the major source of water, drains about 150 square miles of the western slope of the Sierra Nevada Mountains in the northeasterly part of Butte County above the watermaster service area. The highest elevation in the watershed is about 7,000 feet.

Normally, snowmelt produces sustained high flows in the creek until about the end of June, after which perennial springs continue to produce flows of more than 40 cfs. Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toadtown) Canal through De Sabla Reservoir and Powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 13, 14 and 15, pages 28 and 29.

Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T, Inc., Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water by gravity

into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice, including contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in the past few years, especially for orchards.

1983 Distribution

Watermaster service began April 1 in the Butte Creek service area and continued until September 30 with Kenneth E. Morgan, Water Resources Engineering Associate as watermaster.

The water supply from Butte Creek was one of the best in years. Water was sufficient to satisfy all decree rights until August 1. A part of surplus class water was available from August 1 through September 30. Diversion Number 50 could not get all their surplus class water because the creek surface was too low.

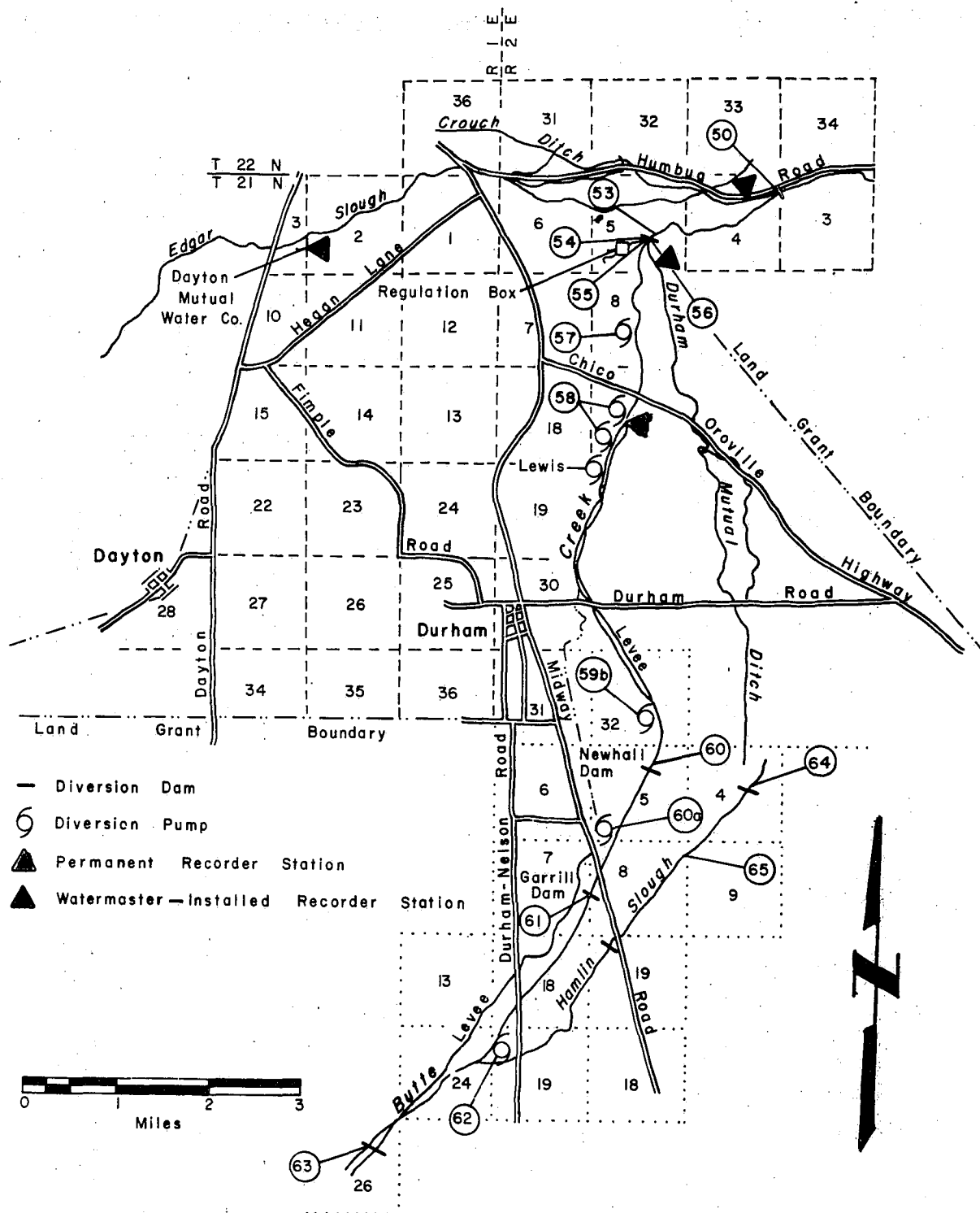
There was a steady release through De Sabla Powerhouse all season.

TABLE 12
WATER RIGHT PRIORITY

Diversion Number	Water Right Owner	Priority			Surplus cfs	Import cfs	Application Permit cfs
		1st cfs	2nd cfs	3rd cfs			
<u>Butte Creek</u>							
50	M. & T., Incorporated				25.00	53.33*	} 1,550 \$
	Parrott Ranch Company				25.00	53.33*	
	Burke et al.	3.00					
	Dayton Mutual Water Co.	16.00				3.33*	
*Water imported by PGandE from West Branch Feather River via Hendricks Canal and released into Butte Creek, less 5% for conveyance losses.							
53 ^{1/}	U. S. Dept. of Agriculture		2.00				
54	Patrick		5.00				13.00 ^{2/}
55	Camenzind et al.		5.00				6.50 ^{2/}
56	Durham Mutual Water Co.	44.70					
	Butte Creek Country Club	2.00					
	Geiger	0.48					
	Dixon	0.39					
	Domom Brothers	0.67					
	Logan	0.01					
	Vernoga	1.447					
	Konyon - Amerio	0.40					
	Bebich	0.446					
	Jugum	0.447					
	Whelock	0.26					
	Total	51.25					
57 ^{1/}	Coats		3.89				
58 ^{1/}	Wakefield		0.43				
58A ^{1/}	Hansen				2.50		
58B ^{1/}	Lewis		2.00				
59B ^{1/}	Adams Esquon Ranch		0.39				
60	Adams Esquon Ranch		6.00	0.75	21.25		107.00 ^{3/}
60A ^{1/}	Keeney et al.		0.66				
61	Gorrill Land Company ^{4/}	1.00 ^{5/}		20.70 ^{5/}		68.00 ^{3/}	
62 ^{1/}	White, Mead, AcAllister, & Ryon			1.00	9.50		
<u>Hamlin Slough</u>							
	Adams Esquon Ranch	16.60					
	Gorrill Land Company	21.70 ^{5/}					

- 1/ Pumps.
2/ March 1-June 30.
3/ March 15-June 15.
4/ See Hamlin Slough.
5/ Total diversions from Butte Creek and Hamlin Slough not to exceed 21.70 cfs.

Figure 4



DIVERSIONS FROM BUTTE CREEK,
BUTTE CREEK WATERMASTER SERVICE AREA

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 13

1983 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR CHICO

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	6310	1620	1210	967	431	243	216	1
2	6010	1540	1110	908	438	249	226	2
3	4600	1370	1030	859	419	234	215	3
4	3020	1210	975	935	405	233	209	4
5	2380	1060	974	852	397	228	203	5
6	1970	977	961	827	391	232	205	6
7	2310	923	891	826	379	223	200	7
8	2150	893	862	806	359	224	203	8
9	1800	865	832	784	349	217	209	9
10	1710	831	791	781	340	216	208	
11	1670	816	745	874	336	211	205	11
12	2390	785	738	737	329	202	166	12
13	6910	744	731	696	325	204	107	13
14	3810	703	736	672	319	203	109	14
15	2650	662	748	645	313	209	90	15
16	2180	644	769	636	305	217	99	16
17	2050	645	747	630	303	214	99	17
18	1840	674	772	635	296	214	94	18
19	1570	1030	826	582	292	211	98	19
20	1440	985	896	555	288	218	99	20
21	1550	895	960	526	286	218	160	21
22	1760	856	985	517	280	244	215	
23	1780	969	1010	512	274	248	231	23
24	2130	1120	1020	497	272	232	239	24
25	1790	1100	993	478	265	223	224	25
26	1520	991	995	470	265	223	152	26
27	2040	940	978	467	264	217	124	27
28	1660	1210	995	451	259	218	121	28
29	1470	1330	1020	441	258	215	125	29
30	1550	1260	1010	435	254	210	171	30
31	2000		969		246	212		31
MEAN	2517	988	912	667	321	221	167	MEAN
AC-FT	154800	58810	56090	39670	19710	13610	9960	AC-FT

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 14

1983 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR DURHAM

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	7460	1730	1270	789	277	71	60	1
2	7260	1610	1150	740	280	71	74	2
3	5520	1400	1080	695	254	68	69	3
4	3530	1220	1020	790	241	66	66	4
5	2670	1080	1020	725	231	66	58	5
6	2160	998	1000	683	218	63	56	6
7	2580	938	927	645	214	60	57	7
8	2360	902	896	644	193	62	53	8
9	1930	890	858	640	173	55	56	9
10	1810	839	812	642	162	54	60	10
11	1770	842	771	725	157	50	58	11
12	2680	806	762	608	154	45	48	12
13	8240	765	760	557	154	45	24	13
14	4430	724	749	528	157	44	24	14
15	3050	675	745	510	152	47	17	15
16	2450	654	724	490	140	47	25	16
17	2250	660	691	474	132	47	39	17
18	1970	690	688	467	123	48	37	18
19	1610	1050	687	415	116	48	39	19
20	1460	1030	699	405	112	53	38	20
21	1650	931	754	365	109	54	81	21
22	1970	886	785	349	100	69	150	22
23	1940	999	834	348	92	75	171	23
24	2410	1190	827	339	93	70	182	24
25	1960	1150	780	327	89	69	169	25
26	1600	1040	787	322	90	67	115	26
27	2410	993	774	314	88	60	77	27
28	1820	1320	780	293	87	57	80	28
29	1550	1430	816	283	85	58	84	29
30	1600	1360	811	283	85	52	125	30
31	2190		779		78	54		31
MEAN	2848	1027	840	513	150	58	73	MEAN
AC-FT	175120	61090	51640	30540	9200	3560	4350	AC-FT

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 15

1983 Daily Mean Discharge
(In cubic feet per second)

TOADTOWN CANAL ABOVE BUTTE CANAL

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		115	117	116	116	112	115	1
2		114	116	116	116	100	109	2
3		114	116	116	116	105	107	3
4		115	117	116	116	106	106	4
5		114	90	116	116	106	104	5
6		113	116	116	116	104	102	6
7		119	117	116	116	102	102	7
8		119	116	116	116	103	112	8
9		119	120	116	116	99	111	9
10		117	119	116	116	96	110	10
11		116	119	116	116	95	110	11
12		117	119	116	116	85	4	12
13		114	119	116	116	97	0	13
14		114	119	116	116	94		14
15		113	119	116	116	102		15
16		112	118	116	116	102		16
17		114	117	116	113	104		17
18		123	118	116	116	103		18
19		114	121	116	114	111		19
20		114	122	116	114	112		20
21		114	121	116	112	110		21
22		114	119	116	115	114		22
23		123	121	116	115	113		23
24		119	124	116	114	111		24
25		117	124	116	115	106		25
26		122	105	116	114	112		26
27		119	114	116	114	111		27
28		124	123	116	114	110		28
29		119	124	116	114	109		29
30		116	120	116	113	108		30
31			116		113	107		31
MEAN ACFT		117 6936	118 7232	116 6902	115 7073	105 6444	99 2364	MEAN ACFT

COW CREEK WATERMASTER SERVICE AREA

The Cow Creek service area is in central Shasta County in the foothills east of Redding. Figures 5 through 5c, pages 33 through 39, show the Cow Creek stream system, including the diversions and major access roads.

Water for this service area comes from three major creek systems. They are North Cow Creek (sometimes referred to as Little Cow Creek), Oak Run Creek, and Clover Creek. These creeks flow in a westerly direction to their confluence in the Millville-Palo Cedro area and thence south to the Sacramento River east of the City of Anderson. The service area is generally a narrow strip of land on both sides of each of these creeks. In some cases, water is exported from one creek to the other.

Basis of Service

The water rights on each of these creek systems were determined by court references and set forth in separate decrees. Water rights for these creeks were set forth by Shasta County Superior Court decrees as follows:

<u>Creek</u>	<u>Decree No.</u>	<u>Date</u>
North Cow	5804	April 29, 1932
Oak Run	5701	July 22, 1932
Clover	6904	October 4, 1937

The North Cow Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis which is now normal practice. Only one priority allotment was provided in each of the Cow Creek service area decrees except for the Oak Run Creek decree, which contains a surplus allotment.

The Cow Creek watermaster service area was originally created on October 17, 1932, including North Cow Creek and Oak Run Creek water rights. On January 21, 1938, the service area was expanded to include the Clover Creek rights.

Water Supply

Water for this service area comes mostly from springs and seepage, with some early snowmelt runoff. The watershed varies in elevation from 500 to 5,000 feet and consists mainly of low brushy hills that do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter months normally produce substantial seepage and springs that flow through the irrigation season. The creeks normally have sufficient water to supply all demands until late July. The supply then gradually decreases to an average of about 60 to 70 percent of allotments by around mid-September.

The daily mean discharge of North Cow Creek near Ingot is presented in Table 19, page 40. The stream gaging station on North Cow Creek is downstream of many of the diversions and is used by the watermaster mainly to indicate changes in flow conditions rather than amounts of water available. Consequently, the records do not show all the available water supply of the creek.

Method of Distribution

Water is diverted from the creeks, in most cases by means of low diversion dams, into ditches that convey it to the place of use. Lateral ditches are then used to spread it over the land. Irrigation has been on a continuous-flow basis instead of by rotation since 1934.

1983 Distribution

Watermaster service began May 1 in the Cow Creek service area and continued until October 20. Donald Hand, Water Resources Engineering Associate, was the watermaster.

There was surplus water in all streams of the service area through August. Some creeks then receded but still provided 100 percent of all allotments.

Cedar Creek

There was surplus flow available for all users throughout the entire season.

North Cow Creek

Surplus water was available to North Cow Creek users throughout the entire irrigation season. Regulation of the various ditches was to see that the surplus waters were shared by all.

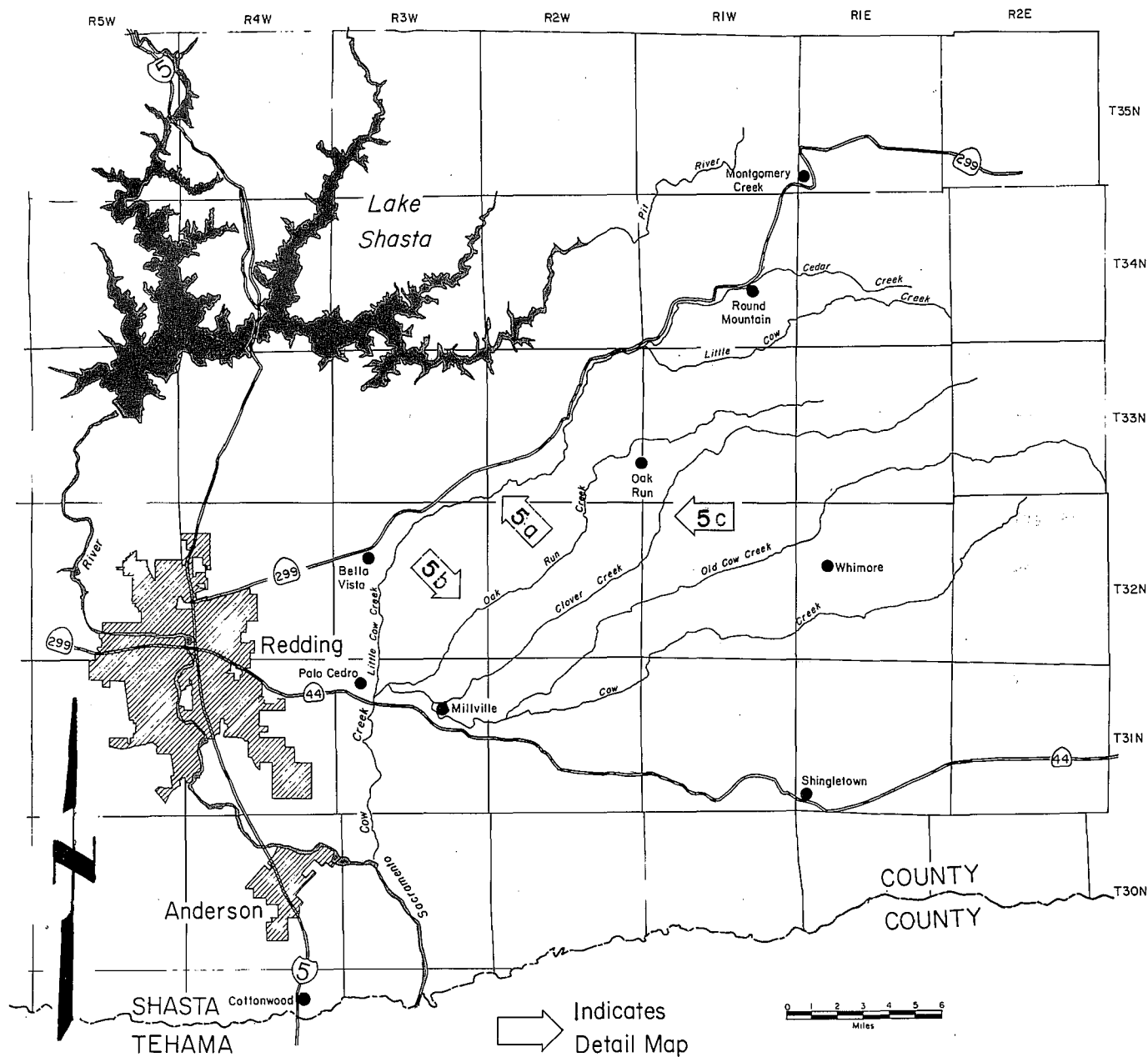
Clover Creek

There was surplus flow below the Millville Ditch, the lowest diversion, until late August. After that, the available water supply was enough to supply 100 percent of all allotments through September 30.

Oak Run Creek

The water supply to Oak Run Creek diverters was adequate throughout the season, with some surplus below the last diversion, much of the time.

Figure 5

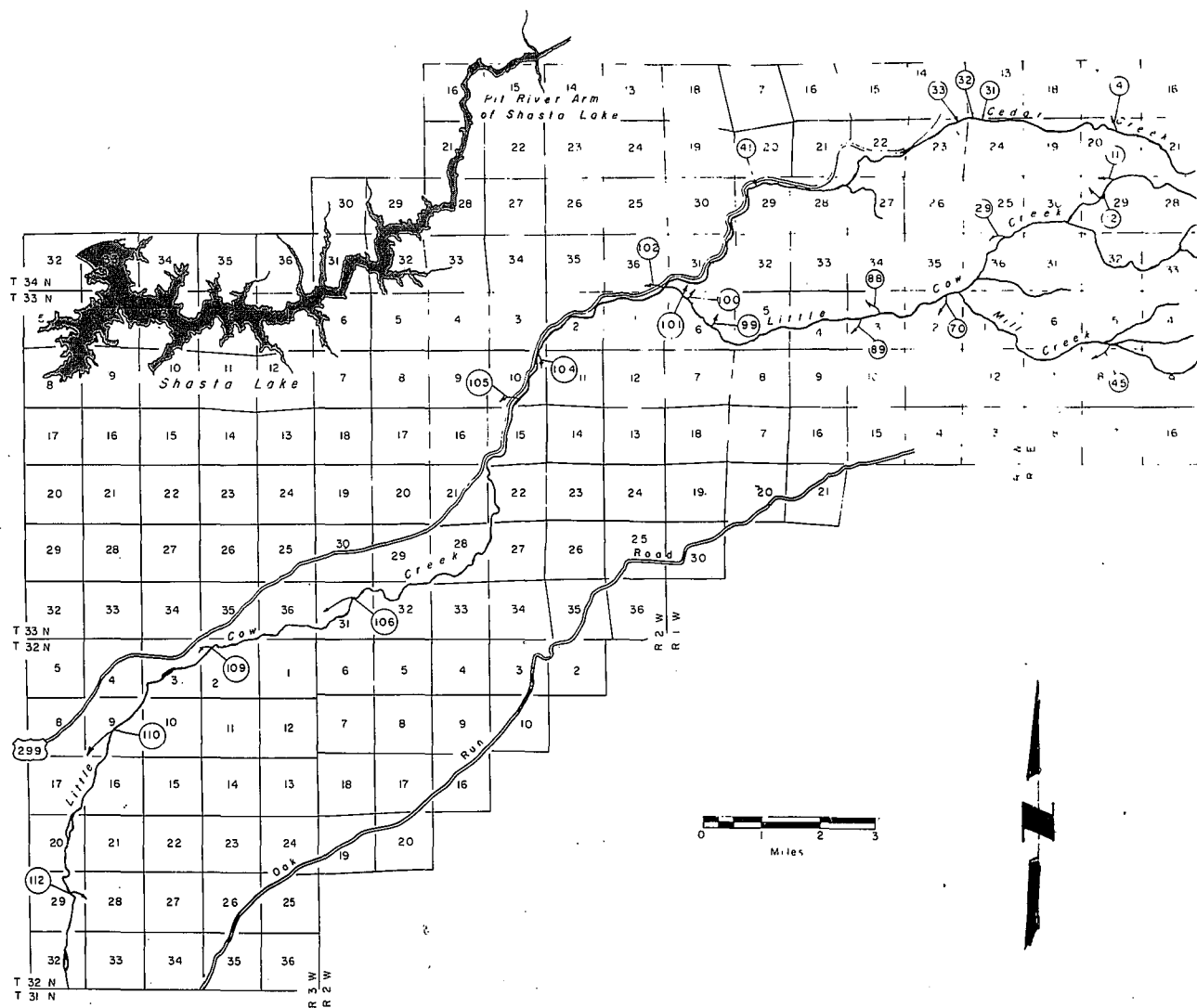


INDEX MAP COW CREEK
WATERMASTER SERVICE AREA

TABLE 16
DIVERSIONS FROM COW CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
4	Bishop	0.50
11	McMillian	0.46
12	Benbow	0.63
29	Grant-Pherson-Jones	2.60
31	Spaulding-Haley	1.30
32	Halcomb	4.00
33	Roe	0.30
41	Hadley (pump)	0.80
45	Export Water to Oak Run Creek	5.00
70	Nichols	0.31
88	Ruthford	1.80
89	Bobich	0.47
99	Shaw	0.10
100	Emerald	0.25
101	Porteous	0.45
102	Hendrix	0.30
104	Artadel Mining Company	0.04
105	Artadel Mining Company	0.55
106	Rickert	4.35
109	Matthews (pump)	0.10
110	Cook & Butcher	4.50
112	Boyle (pump)	0.40

Figure 5a



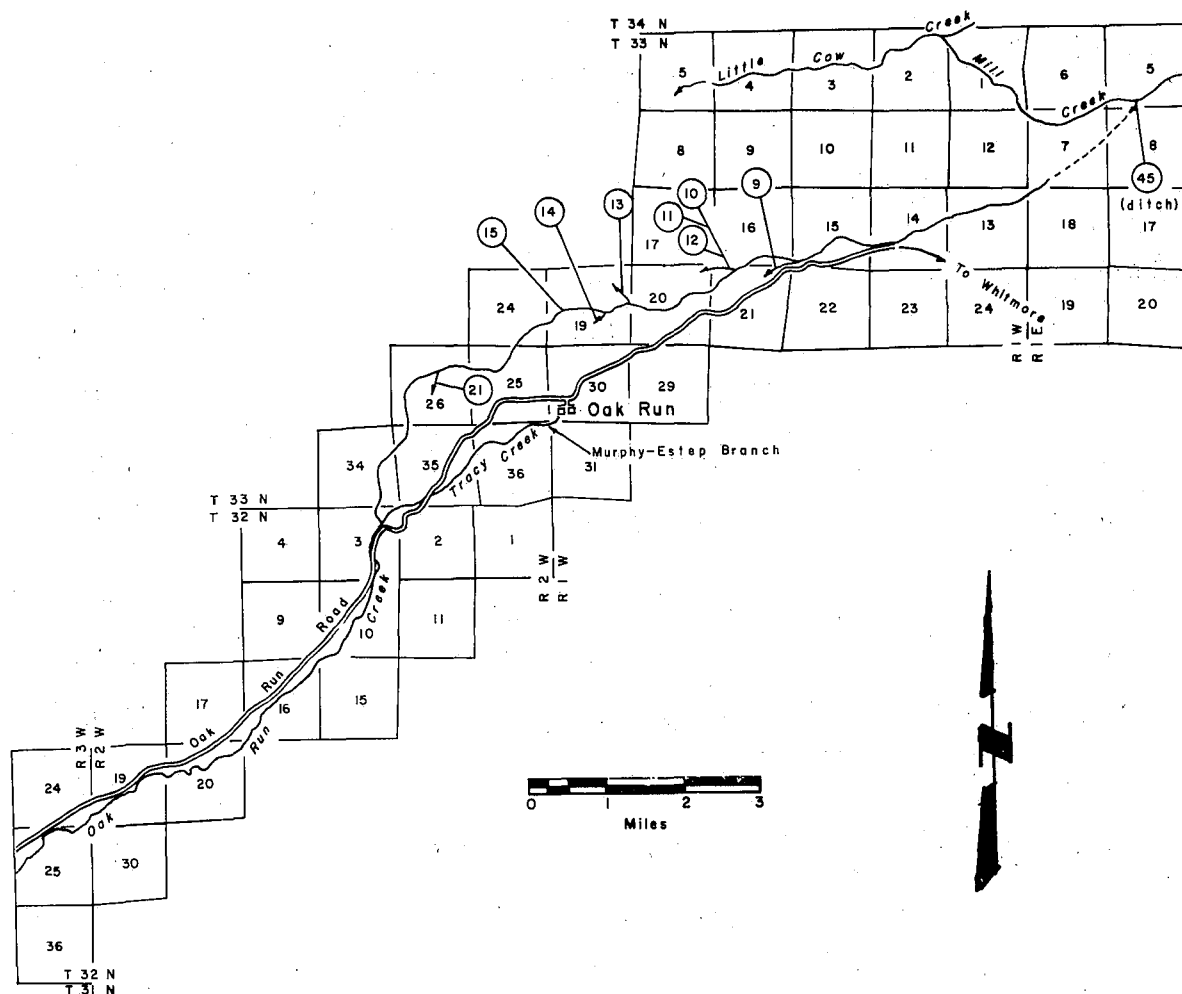
DIVERSIONS FROM COW CREEK,
COW CREEK WATERMASTER SERVICE AREA

TABLE 17
DIVERSIONS FROM OAK RUN CREEK

<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
45	Welsh-Strayer Ditch from Mill Creek to Oak Run Creek	5.00
9	Welsh-Strayer Rediversion	2.30*
10	Pedmore Upper	
11	Pedmore Lower	0.25
12	Pedmore South	
13	Alpaugh	0.65
14	Pedmore	0.65
15	Kerkendahl	0.65
21	Winters (Surplus)	0.395

* When flow of Oak Run Creek at Diversion 9 is less than 5.40 cfs, including foreign water from Mill Creek, the flow at Diversion 9 will be divided 43 percent into Diversion 9 and 57 percent to Oak Run Creek.

Figure 5b

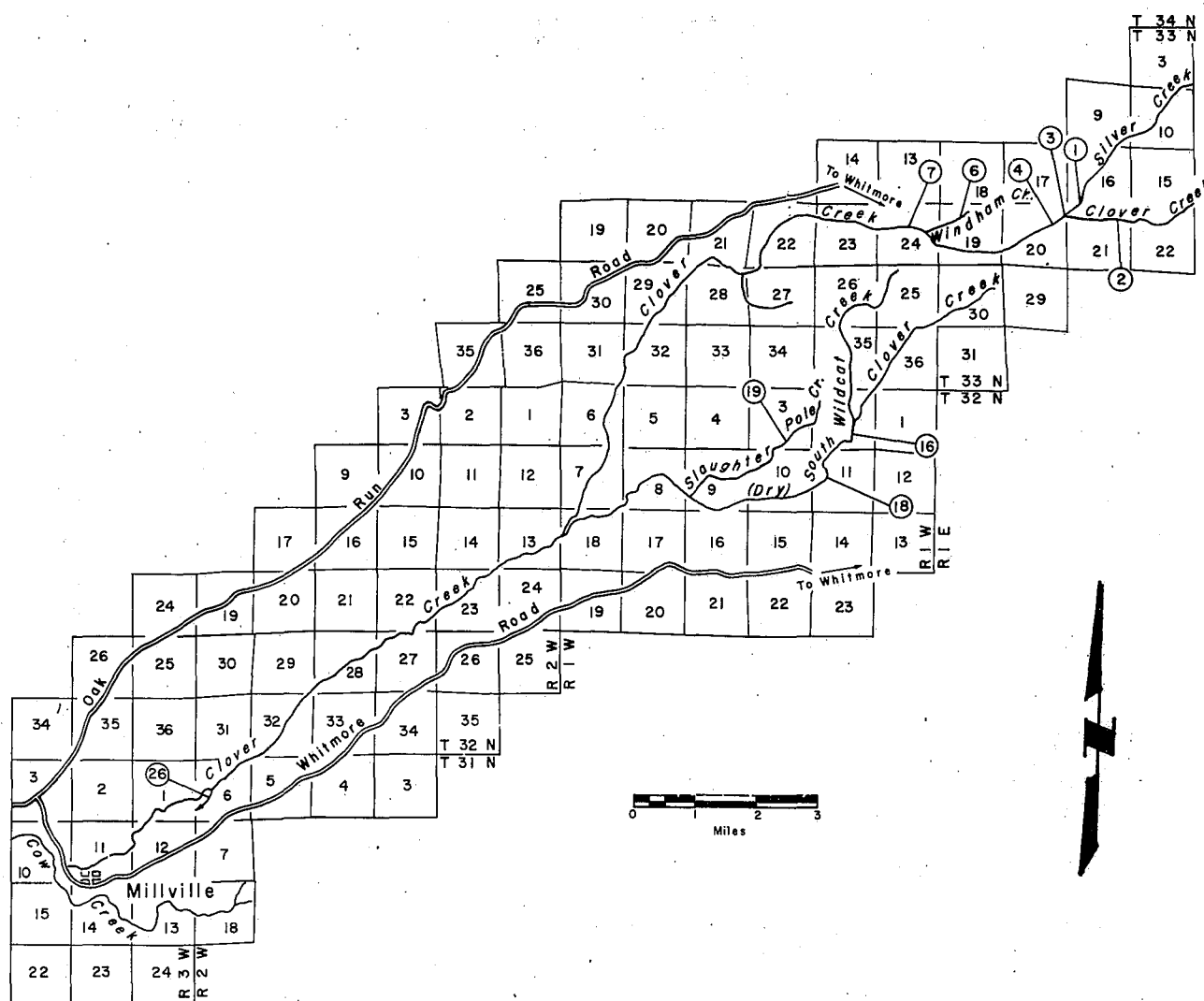


DIVERSIONS FROM OAK RUN CREEK, COW CREEK WATERMASTER SERVICE AREA

TABLE 18
DIVERSIONS FROM CLOVER CREEK

<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
1	Worley Ditch	2.74
2	Guttman Ditch	1.85
3	Bonde Ditch	1.30
4	Mill Ditch	5.45
6	Maxwell Ditch	0.35
7	Welch-Nailer Ditch	2.15
16	Harper-Covey	0.50
18	Hunt	0.40
19	Slaughter Pole Ditch	0.40
26	Millville Ditch	6.50

Figure 5c



DIVERSIONS FROM CLOVER CREEK,
COW CREEK WATERMASTER SERVICE AREA

COW CREEK WATERMASTER SERVICE AREA

TABLE 19

1983 Daily Mean Discharge
(In cubic feet per second)

NORTH COW CREEK NEAR INGOT

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
MEAN								MEAN
AC-FT								AC-FT

NO RECORD FOR 1983

DIGGER CREEK WATERMASTER SERVICE AREA

The Digger Creek service area is situated in southeastern Shasta County and northeastern Tehama County.

Digger Creek forms part of the boundary between Shasta and Tehama Counties. It drains about 45 miles on the western slopes of the Sierra, just west of Lassen National Park. The creek flows west through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, lies about 40 miles northeast of Red Bluff. A map of the Digger Creek stream system is presented as Figure 6, page 45.

Basis of Service

The rights to use of the waters of Digger Creek were determined by five court adjudications. The Crooker Ditch, now combined with the Harrison Ditch, may divert all the water in the creek at its point of diversion. Diversions below this point, though defined by decree, are not in the service area.

Four Tehama County Superior Court decrees define the rights included in the service area. These decrees are listed on page 42.

The four decrees have, in effect, divided the water rights on the creek into two groups, the upper users and the lower users. The three upper users irrigate land alongside the stream so that all run-off water returns to Digger Creek. The lower users are located within a 5 square mile area. Very little runoff from the lower users returns to the creek.

The water rights of the three upper users are absolute and not related to those of lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, the upper users, in effect, have first priority allotments, and the lower users have second and third priority allotments.

Water Supply

Precipitation, mainly in the winter, is typical of Northern California foothills. Snowmelt contributes to the early runoff, but the summer streamflow is primarily from springs. In average runoff years there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the irrigation season, but serious deficiencies occur in dry years.

The estimated daily mean discharge of Digger Creek below the mouth of the South Fork is presented in Table 21, page 43.

Method of Distribution

Irrigation is done mainly by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1983 Distribution

Watermaster service began on June 6 and continued until September 30 with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The available water supply on Digger Creek was one of the best in years. All water rights were filled during 1983. There was a surplus flow past the lowest diversion during the season.

The Randall Ditch was reactivated in 1982. A pipeline was laid in the existing ditch and a headgate was installed at the point of diversion.

The Forward Powerhouse began operation on May 16, 1983, and is required to bypass 3 cfs for fish flows. An average flow of 21 cfs was diverted, from May 17 to October 6, through the Mill Ditch from south fork branch Digger Creek. The flow was returned below the Campbell Ditch into Digger Creek.

The streamflow station Digger Creek below south fork branch will indicate a much lower flow now that the Forward Powerhouse diverts into Mill Ditch at a much greater flow.

TABLE 20

DECREES DEFINING DIGGER CREEK WATER RIGHTS

<u>Case</u>	<u>Decree No.</u>	<u>Date Entered</u>
Gransbury V. Edwards	2213	August 12, 1899
Wells V. Pritchard	2114	May 27, 1913
Harrison et al V. Kaler etal	3327	October 16, 1917
Herrick V. Forward	4570	February 24, 1927

DIGGER CREEK WATERMASTER SERVICE AREA

TABLE 21

1983 Daily Mean Discharge
(In Cubic Feet Per Second)

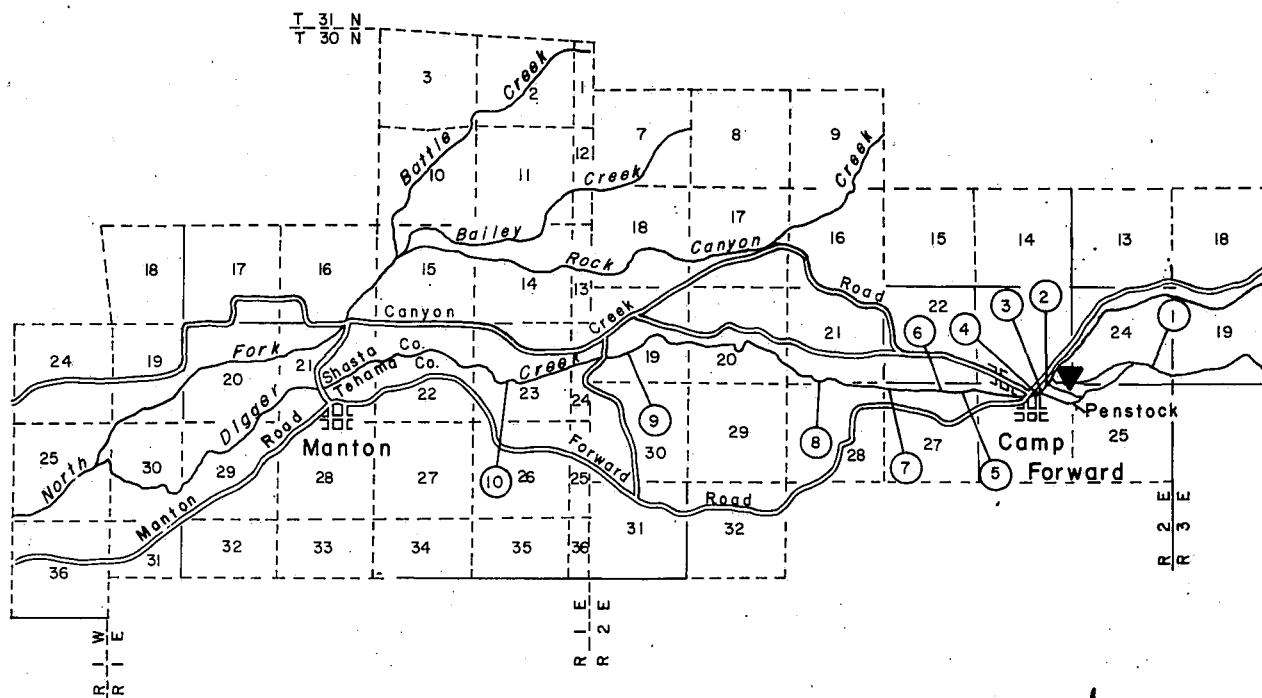
DIGGER CREEK BELOW SOUTH FORK BRANCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1				135	92	45	23	1
2				135	90	44	26	2
3				135	84	42	20	3
4				135	87	42	20	4
5				135	90	40	19	5
6				135	87	48	18	6
7				135	77	48	17	7
8				135	67	44	18	8
9				134	64	38	17	9
10				139	64	36	16	10
11				135	67	36	16	11
12				117	69	33	14	12
13				113	80	33	14	13
14				113	81	33	13	14
15				112	73	32	13	15
16				113	67	31	16	16
17				116	62	36	13	17
18				110	59	29	12	18
19				104	56	29	12	19
20				99	54	29	11	20
21				95	55	28	11	21
22				104	54	31	17	22
23				106	52	29	21	23
24				99	51	28	18	24
25				99	50	26	15	25
26				98	47	25	12	26
27				92	47	24	9	27
28				99	46	23	10	28
29				92	46	22	11	29
30				87	46	22	9.6	30
31					46	23		31
MEAN				115	64.8	33.2	15.4	MEAN
AC-FT				6855	3987	2041	916	AC-FT

TABLE 22
DIVERSIONS FROM DIGGER CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1,3-5	Forward Brothers	7.65
6	Wright	0.50
	Pritchard	0.375
	Pritchard	2.25
7	Pritchard	0.45
8	Boole Ditch	7.90
9	Williams Ditch	1.10
10	Crooker-Harrison Ditch	3.00

Figure 6



▲ Watermaster - installed recorder station.



DIVERSIONS FROM DIGGER CREEK, DIGGER CREEK WATERMASTER SERVICE AREA

FALL RIVER WATERMASTER SERVICE AREA

The Fall River service area is in Shasta County near Fall River Mills and McArthur, about 70 miles northeast of Redding via State Route 299.

The Tule River starts at Big Lake and Horr Pond and flows about 5 miles to Fall River. The McArthur diversion canal diverts water by gravity from the Tule River that flows 5 miles to the vicinity of McArthur, where land is irrigated along the Pit River.

Two pumps are monitored in the service area, one in the Tule River and one on Fall River.

Basis of Service

The Fall River service area was created on March 15, 1976; watermaster service began in 1976.

Watermaster service is provided annually from March 15 to October 15 in accordance with an agreement dated November 25, 1975, between John McArthur, Kenneth McArthur and Pacific Gas and Electric Company (PG&E).

1983 Distribution

Watermaster service began on March 15 and continued until June 30, with Donald Hand, Water Resources Engineering Associate, as watermaster.

The flow in McArthur Canal was regulated in accordance with water rights adjudicated to the McArthur family by the Shasta County Superior Court in a judgment dated April 26, 1928, modified by agreement dated March 15, 1976, between Kenneth McArthur and PG&E.

In the letter of understanding dated October 13, 1976, between PG&E and John R. McArthur, it was agreed that for all water used on nonriparian lands (presently comprising about 4,700 acres) corresponding flow reductions will be made in the diversions into the McArthur Canal.

Two electric pumps, one a 50 hp and the other a 25 hp, are used to divert the water to the nonriparian lands. These diversions are checked every ten days. Pumping usually starts in May and stops in September.

Watermaster service was stopped by mutual agreement of PG&E and John R. McArthur on June 30, 1983.

TABLE 23
1983 MONTHLY SUMMARY OF McARTHUR DIVERSIONS

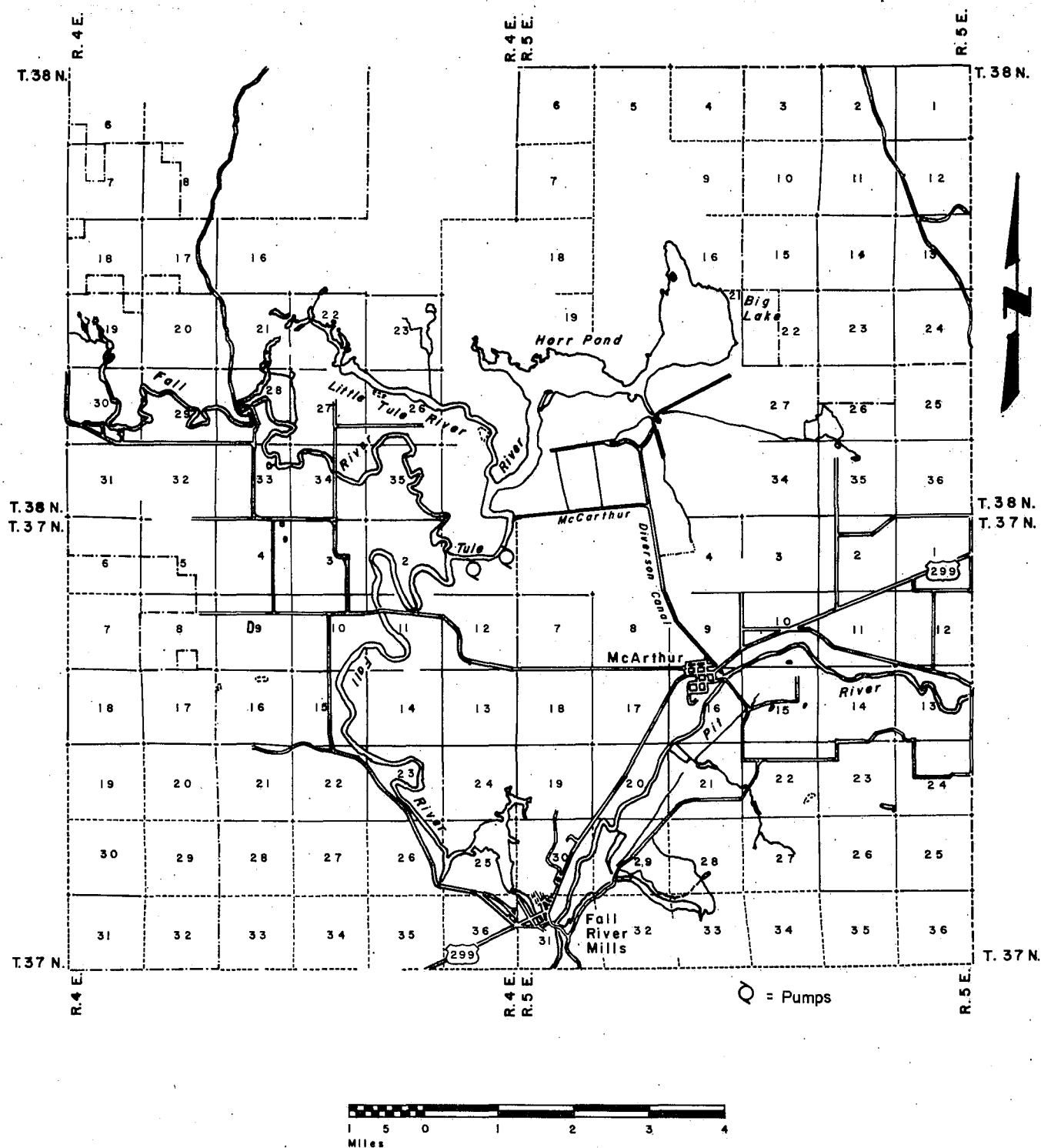
Period	Total McArthur Diverions ^{3/} ac-ft	McArthur Water Rights ac-ft
Mar 15-31 ^{1/}	792	807
Apr	1,466	1,562
May	2,023	2,037
Jun 30 ^{1/}	2,117	1,978

^{1/} Beginning of watermaster season.

^{2/} End of watermaster season.

^{3/} Includes McArthur Canal and two pumps on nonriparian lands.

Figure 7



McARTHUR CANAL DIVERSIONS, FALL RIVER WATERMASTER SERVICE AREA

HAT CREEK WATERMASTER SERVICE AREA

The Hat Creek area is in the eastern part of Shasta County, north of Lassen Volcanic Park. The maps, Figures 8 through 8b, pages 53 through 57, show the Hat Creek service area and stream system, including locations of the diversions of the upper and lower user groups.

Hat Creek, which flows north through the area, is the only source of water in the service area. The place of use is Hat Creek Valley, which is about 20 miles long and 2 miles wide, running north from about 3 miles south of the town of Old Station to the confluence with Rising River. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large outcroppings of volcanic rocks.

Basis of Service

Water from Hat Creek is distributed under provisions of court reference adjudications which resulted in Decree No. 5724, dated May 14, 1924, and Decree No. 7858, dated May 7, 1935, Shasta County Superior Court. Decree No. 5724 established irrigation and nonirrigation allotments for 18 periods of rotation between "upper" and "lower" user groups for the period of May 1 to October 28 annually. Decree No. 7858 established three allotments for continuous irrigation, May 1 through October 28, and allotments for the period October 28 to May 1 annually for all users. These latter rights are not normally supervised by the watermaster.

Watermaster service in the Hat Creek area has been provided in accordance with the decree since 1924. The existing service area was created on September 11, 1929.

Decree No. 5724 defines the allotments in the separate schedules: upper and lower users, requiring 10-day rotations beginning at 6 a.m., May 1, and ending at 6 a.m., October 28. All water rights are of the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 154.7 cfs and lower users require 166.5 cfs. The lower users require more because of additional channel loss. When the upper users are being served, the lower users receive a minimum flow for stock water.

Water Supply

The water supply of Hat Creek comes from snowmelt runoff from Lassen Peak and from large springs. Snowmelt normally creates a high flow during May and June, but most of the summer supply comes from large springs that decrease only slightly in output. Only after a series of dry years does the flow of these springs fall much below 75 percent of total allotments.

Method of Distribution

Most irrigation in the area is done by wild flooding. Large heads of water are used to cover the land rapidly, thereby preventing excessive loss from percolation in the extremely porous soil. Diversion dams built across the creek divert

water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditches or from laterals. A few domestic rights are met by pumping directly from Hat Creek.

1983 Distribution

Watermaster service began on May 1 and continued until October 28 with Donald Hand, Water Resources Engineering Associate, as watermaster.

The season started on May 1 with the creek flow exceeding demand. All users got 100 percent of their right throughout the season. This was an outstanding year on Hat Creek.

HAT CREEK WATERMASTER SERVICE AREA

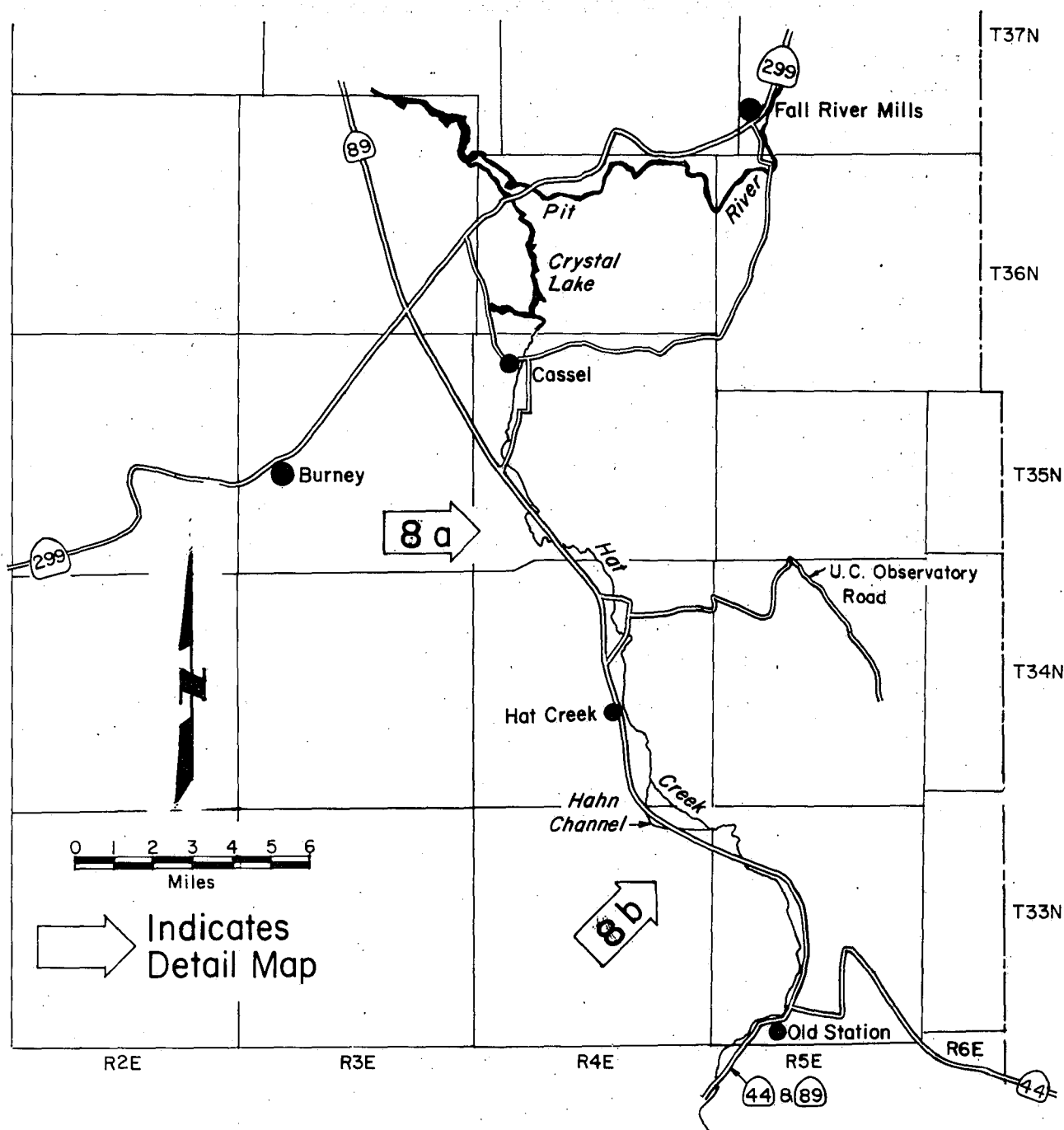
TABLE 24

1983 Daily Mean Discharge
(In Cubic Feet Per Second)

HAT CREEK NEAR HAT CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	171	178	164	320	345	221	180	1
2	169	176	164	298	345	223	178	2
3	169	172	166	295	308	220	177	3
4	168	171	170	312	306	213	176	4
5	167	169	171	315	326	212	171	5
6	166	168	169	319	324	209	170	6
7	168	168	168	336	308	210	169	7
8	165	169	170	341	274	206	169	8
9	166	169	168	357	264	206	168	9
10	172	168	167	371	258	203	167	10
11	174	169	166	388	261	200	164	11
12	173	168	168	343	268	195	164	12
13	218	166	169	332	281	193	165	13
14	202	165	172	352	295	193	168	14
15	191	164	176	357	284	190	168	15
16	185	163	178	354	262	189	168	16
17	182	165	180	369	260	187	167	17
18	180	165	184	373	244	185	167	18
19	176	166	191	338	240	188	166	19
20	175	168	199	322	235	190	166	20
21	174	168	208	306	234	196	166	21
22	174	169	219	322	237	200	168	22
23	173	171	235	331	234	195	170	23
24	173	170	245	326	231	187	170	24
25	170	168	249	318	229	185	168	25
26	169	166	257	324	224	184	167	26
27	170	166	275	322	223	182	168	27
28	168	166	284	315	225	180	168	28
29	168	164	302	309	226	180	171	29
30	171	164	300	308	228	179	172	30
31	188		309		230	179		31
MEAN	175	168	205	332	265	196	169	MEAN
AC-FT	10780	9990	12580	19780	16280	12060	10070	AC-FT

Figure 8



INDEX MAP HAT CREEK WATERMASTER SERVICE AREA

TABLE 25

DIVERSIONS FROM LOWER HAT CREEK

<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
20,21	Lonquist, Upper, Lower	4.50 ^{1/}
22	Reiger	7.00 ^{1/}
23	Lonquist	2.50 ^{1/}
24	Morris, Upper	13.50 ^{2/}
25	Morris, Lower	22.25 ^{2/}
26	Lonquist-Reynolds-Bidwell	15.00 ^{1/}
27	Lonquist-Reynolds, East Side	3.50 ^{1/}
28	Lonquist-Reynolds, Middle	0.50
29	Reynolds Diversion	4.00 ^{1/}
30	Bone, Upper (Indian, not in WSA)	0.50
31	Bone, Lower (Indian, not in WSA)	0.50
32	Bone (Indian, not in WSA)	1.00
33	Wilson (Indian, not in WSA)	5.50
34	Williams (Indian, not in WSA)	0.75
35	Wilson (Indian, not in WSA)	2.75
36	Brown, Upper	3.00
37	Brown	11.50
38	Brown, Lower	3.25
39	Snook	0.50
40	Doyel	20.00
41	Giessner	10.25
42	Giessner	8.00

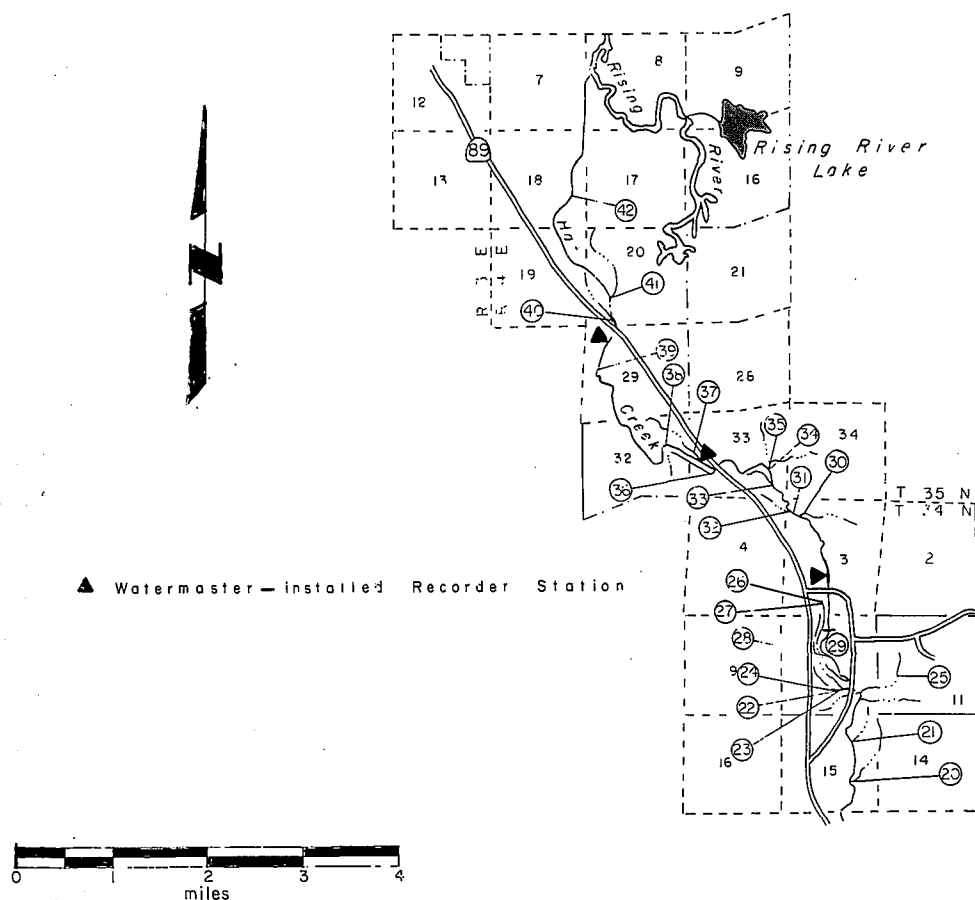
DIRECT DIVERSIONS FROM HAT CREEK

37a	Hat Creek	2.50
40a	Hat Creek	6.25
42a	Hat Creek	8.00

<u>1/</u>	Total water right
<u>2/</u>	Upper and Lower user
<u>3/</u>	Upper user

NOTE: Upper and Lower users are on a ten-day rotation. Minimum flows allowed in each ditch when not on irrigation schedule.
The above water rights do not include the mud flow right defined in Paragraphs 21 and 22 of the Hat Creek Decree.

Figure 8a



DIVERSIONS FROM LOWER HAT CREEK,
HAT CREEK WATERMASTER SERVICE AREA

TABLE 26
DIVERSIONS FROM UPPER HAT CREEK

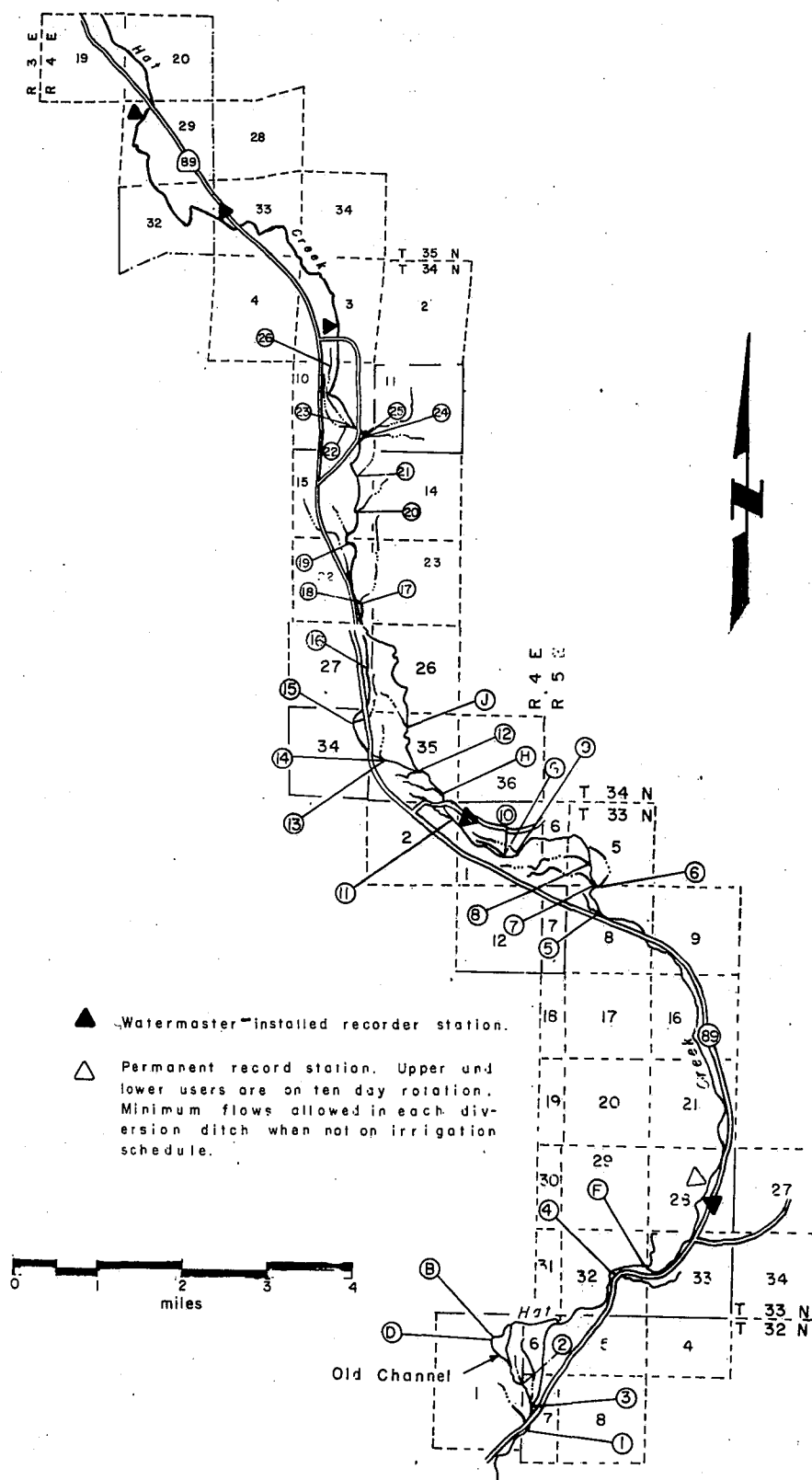
<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
1,2	Wilcox, Upper, Lower	2.125
3	Stevenson	2.375
4	Hall	2.750
5	Brown	0.500
6	Hawkins	2.250
7	Wilcox, Upper	7.125
8	Wilcox	22.375
9	Wilcox-Davis	5.000
10	Wilcox, Lower	1.000
11,12	Valentine, Upper, Lower	10.000
13,15	Heryford, Upper, Lower	1.000
14	Heryford, Middle	1.500
16	Snook	5.375
17	Ratledge-Lonquist	5.375
18	Ratledge-Opdyke-USFS	6.750
19	Opdyke	12.000
20, 21	Lonquist, Upper, Lower	<u>2/</u>
22	Reiger	7.000 <u>2/</u>
23	Lonquist	<u>1/</u>
24	Morris, Upper	13.500
25	Morris, Lower	22.250
26	Lonquist-Reynolds-Bidwell	15.000
B	Consterdine	0.560
D	Stevenson	7.781
D,3	Total Allotment	10.356
F	Shearon	0.960
G,H	Grant, Lower	0.500
J	Domestic	0.500

1/ Lower Hat Creek users

2/ Both Lower and Upper Hat Creek users

NOTE: The above water rights do not include the mud flow rights defined in Paragraphs 21 and 22 of the Hat Creek Decree.

Figure 8b



DIVERSIONS FROM UPPER HAT CREEK, HAT CREEK WATERMASTER SERVICE AREA

INDIAN CREEK WATERMASTER SERVICE AREA

The Indian Creek service area is in north central Plumas County, near Greenville.

The major sources of supply in the service area are Indian Creek and two tributaries, Wolf Creek and Lights Creek. Indian Creek and its minor tributaries rise in the mountains east of the service area. It flows through Genesee and Indian Valleys and past Taylorsville and Crescent Mills to where it joins the North Fork Feather River. Indian Creek is joined on the north by Lights Creek in southeast Indian Valley and by Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, an irregular-shaped area of about 20 square miles. The average elevation is about 3,500 feet.

Maps of the whole area and of each major stream system within the Indian Creek service area are presented as Figures 9 through 9c, pages 61 through 67.

Basis of Service

The Indian Creek watermaster service area was created on February 19, 1951, to include, with certain exceptions, the water rights set forth in Decree No. 4185, entered December 19, 1950, by the Superior Court of Plumas County, and the rights under Permit 7665 issued in approval of Application 12642 after entry of the decree. The statutory proceeding leading to the decree was entitled "In the Matter of the Determination of the Rights of the Various Claimants to the Water of Indian Creek Stream System in Plumas County, California".

The service area has been amended twice. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports show the work accomplished. There are 47 water right owners in the service area, with total allotments amounting to 96.715 cfs. Indian Creek decree establishes three priority classes for each major stream within the service area.

Water Supply

The water supply in the Indian Creek service area comes mainly from snowmelt, with springs and seepage maintaining some late summer flows. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1. Indian and Lights Creeks have sufficient flow to supply all allotments until July 1. After these dates, flows decrease throughout the season until, by the end of August, only a small part of allotments is available.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are constructed in the stream channels to divert water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley, and a few sprinkler systems are in use.

1983 Distribution

Watermaster service began in the Indian Creek service area on April 19 with Jon A. Haman, Water Resources Engineering Associate, as watermaster. The available supply in the service area was above average during the season.

Wolf Creek

The available water supply of Wolf Creek was sufficient to satisfy all allotments (three priorities) during the irrigation season due to reduced pumping at Diversions No. 67 and 68.

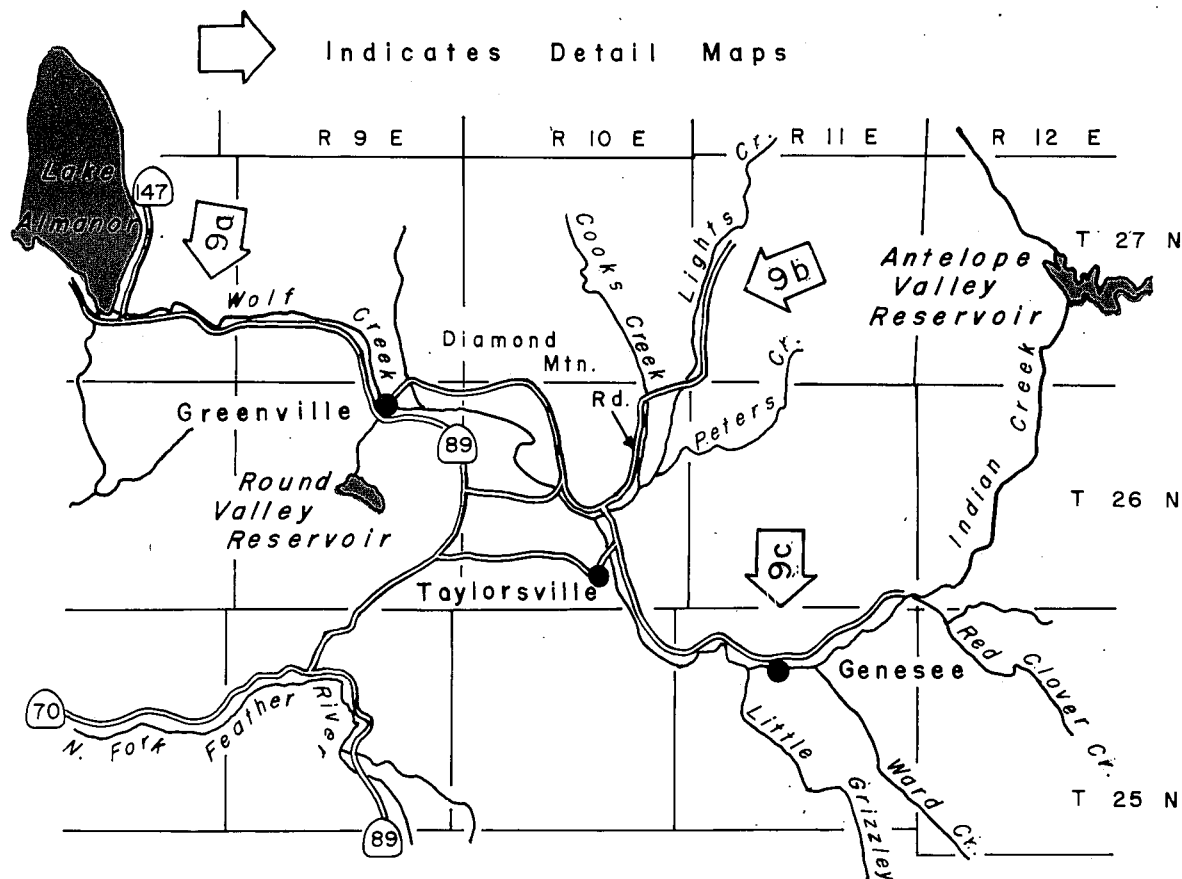
Lights Creek and Tributaries

On Lights Creek, the water supply was enough to satisfy all allotments (three priorities) through mid-September on Cooks Creek. The surface flow at County Road continued the entire season.

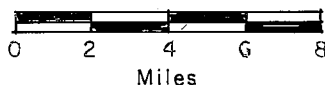
Indian Creek

The water supply of Indian Creek was enough for all allotments (three priorities) during the irrigation season.

Figure 9



(Served by: Department Water Resources—Central District,
Watermaster Service.)

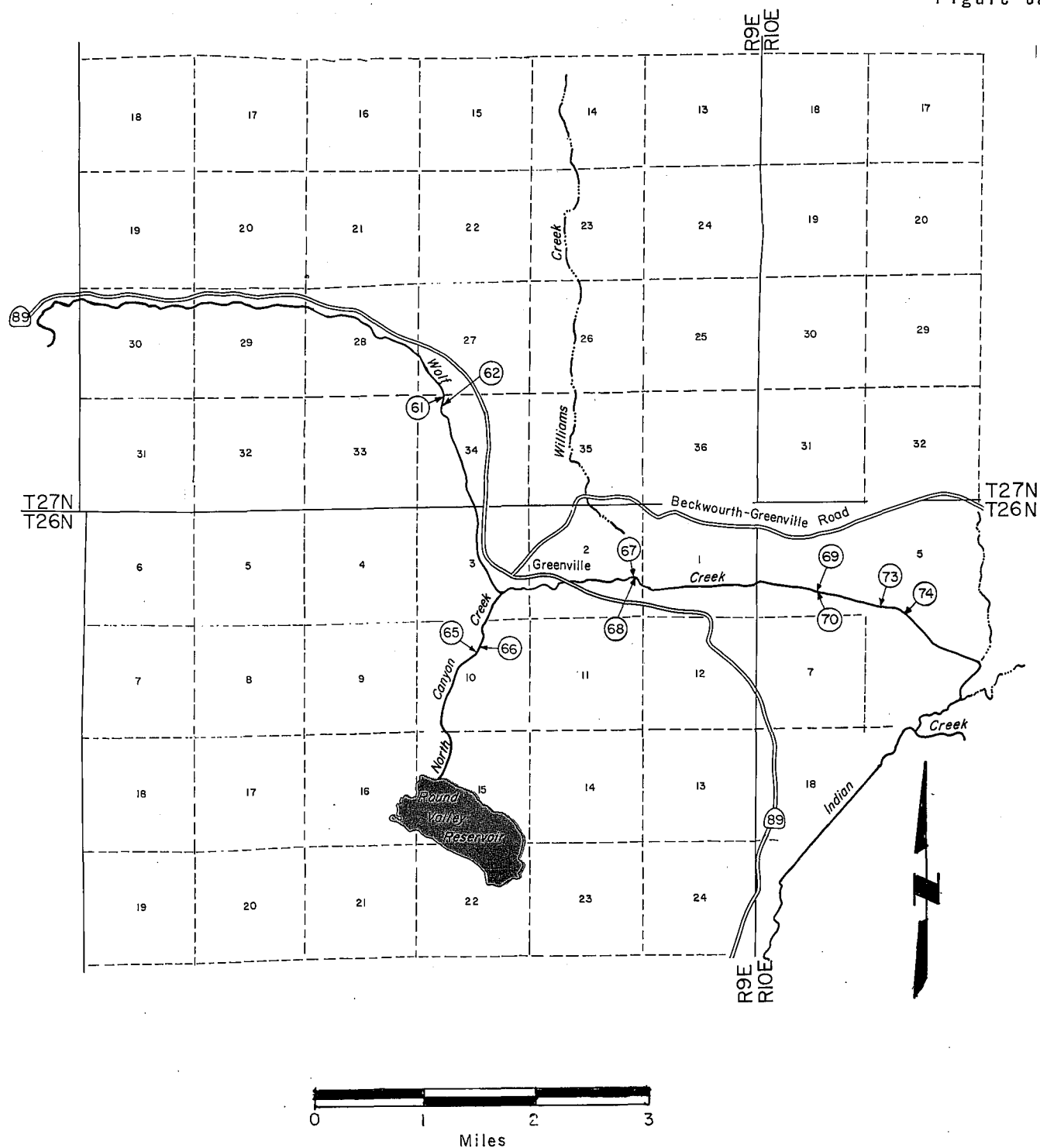


INDEX MAP DIVERSIONS FROM INDIAN CREEK WATERMASTER SERVICE AREA

TABLE 27
DIVERSIONS FROM WOLF CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
61	McMullen	0.10
62	Wattenberg	0.28
	Hollingsworth	0.70
65	Bidwell	0.10
	Jernigan	0.10
66	Embree	0.18
	Rilea	0.07
	Colagross	0.054
	Lanning	0.013
	Santoni	0.183
67	Leiniger	0.70
	Duensing	0.90
	Carr	2.70
	Meyer	0.35
	Foot	0.35
	Thompson	0.805
	Irish	0.143
	Holmes	0.04
	Micheal	0.04
	Hatch	0.022
68	Carr	2.25
69	Sheehan	1.75
70	Kallis, Leal	3.85
73	Foster	1.00
74	Rogers	1.40

Figure 9a

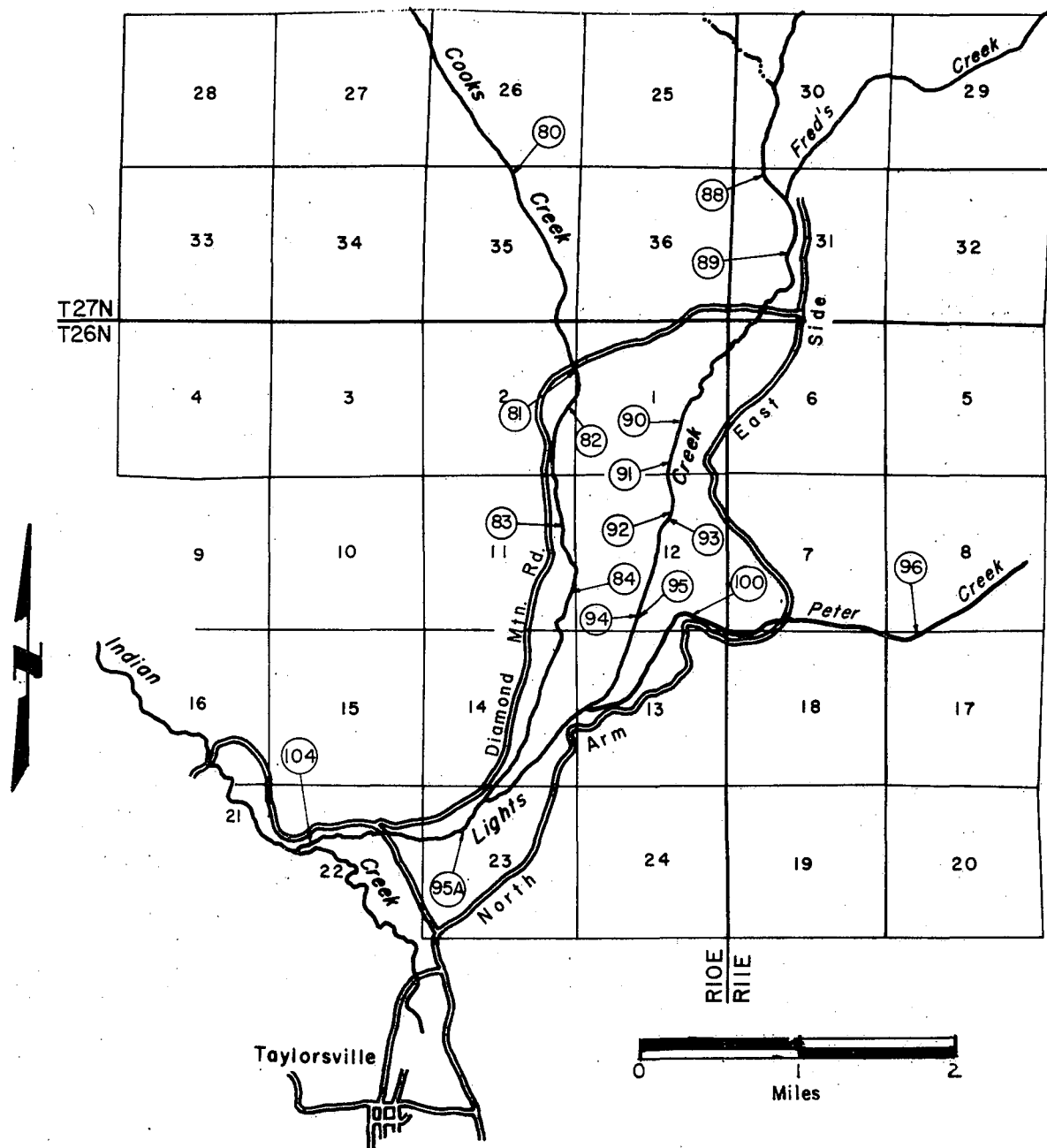


DIVERSIONS FROM WOLF CREEK, INDIAN CREEK WATERMASTER SERVICE AREA

TABLE 28
DIVERSIONS FROM LIGHTS CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
80	Lynch	1.50
81	Metcalf, Leininger, & Foor	1.00
82	Foor	0.45
83	Harlan	0.30
84	Harlan	0.45
88	Harlan	2.90
89	Metcalf, Leininger, & Foor Defanti	0.95 2.85
90	Foor	1.20
91	Harlan	3.10
92	Harlan	1.90
93	Harlan Peter	1.35 0.55
94	Harlan Campbell-Cal Ranch, Inc.	0.85 0.85
95	Harlan	1.175
95a	Carr	0.05
96	Peter	2.00
100	Harlan	0.20
104	Awbrey	0.16
104	Trombly Neer	0.011 0.029

Figure 9b



DIVERSIONS FROM LIGHTS CREEK,
INDIAN CREEK WATERMASTER SERVICE AREA

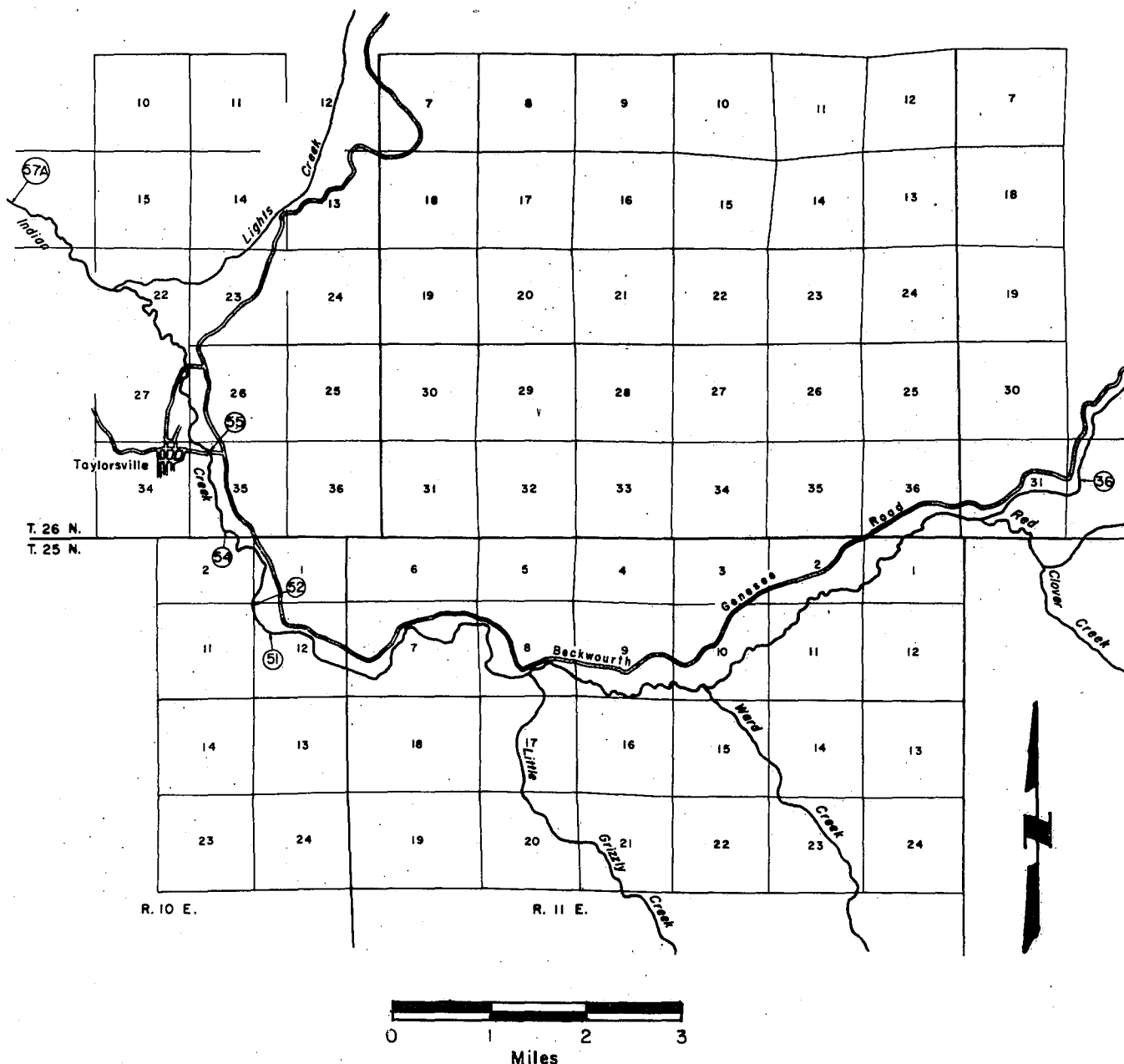
TABLE 29

DIVERSIONS FROM INDIAN CREEK AND UPPER TRIBUTARIES

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
36	Wilbur	5.28
51-52	Page	1.33*
54	Mill Race Ditch	42.30
	Brown	
	Brown	
	Crenshaw et al.	
	Foster	
	Johnson	
	Leininger	
	Matz	
	Neer	
	Pearce	
	Probst	
	Scudder	
	Young	
55	Carr	3.40
57a	Neer	2.50

*Diversion at 51 may also be diverted at 52.

Figure 9c



DIVERSIONS FROM INDIAN CREEK AND UPPER TRIBUTARIES, INDIAN CREEK WATERMASTER SERVICE AREA

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

The Middle Fork Feather River service area is in Sierra Valley, a plateau on the west slope of the Sierra Nevada in eastern Sierra and Plumas Counties.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in the Sierra Valley. The area comprises five major stream groups. Starting in the northeast corner of the valley and proceeding in a clockwise direction, these are: Little Last Chance Creek, Smithneck Creek, Webber Creek and tributaries, West Side Canal, and Fletcher Creek and Spring Channels. The Middle Fork Feather River flows generally north for about 15 miles through Sierra Valley. It then flows out of the valley in a westerly direction near Beckwourth. The major place of use is in Sierra Valley, which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

Maps of the Middle Fork Feather River service area are presented as Figures 10 through 10h, pages 72 and 76 through 83.

Basis of Service

The Middle Fork Feather River watermaster service area was created on March 29, 1940, to include, with the exception of certain tributaries and springs, all water rights set forth in Decree No. 3095, entered in the Middle Fork Feather River statutory adjudication proceeding on January 19, 1940, Superior Court, Plumas County. The decree establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek, eight; Smithneck Creek, five; West Side Canal Group, five; Fletcher Creek and Spring Channels, three; Webber Creek and tributaries, six; and Sierra Valley Water Company, one.

The service area has been amended three times. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished.

There are currently 107 water right owners in the service area, with total allotments amounting to 372.079 cfs.

Water Supply

The major water supply in the Middle Fork Feather River service area comes from snowmelt runoff, with minor flow from springs and supplemental stored and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam, which was built by the Department of Water Resources in 1961. Stored water is released and used as needed under the provisions of an annual contract.

Smithneck Creek flow is normally sufficient to supply all allotments until about the middle of May. It then decreases until about June 1 when only first and second priority allotments are available for the rest of the season.

The natural flow of Webber Creek is normally sufficient to supply all allotments until the middle of May. At that time, up to 60 cfs is diverted from the Little Truckee River to supplement the flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then into Webber Creek, via Cold Stream, for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly in July, producing only a small quantity during the latter part of the season.

The West Side Canal streams normally supply all allotments until early of June. The flow then gradually declines throughout the season. The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. It then gradually declines for the rest of the season. Records of the daily mean discharge of Little Truckee Ditch and the Middle Fork Feather River near Portola are presented in Tables 31 and 32, page 84.

Method of Distribution

Wild flooding is used by most ranches to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

1983 Distribution

Watermaster service began March 15 in the Middle Fork Feather River service area and continued until September 30, with Conrad Lahr, Water Resources Engineering Associate, as Watermaster. The available supply in the service area was above average during the season.

Little Last Chance Creek

Frenchman Dam and Reservoir began its twenty-second season of operation. A five-year contract concerning storage, distribution, and sale of water was negotiated during 1979 with the Last Chance Creek Water District. Delivery and distribution of water was made in accordance with the provisions of the contract and the instruction of the District's Board of Directors.

Smithneck Creek

More than enough water was available in this system to meet demand until the first of July. The regular two-week rotation of water for first and second priorities below Highway 49 was not employed this year.

Webber Creek

There was sufficient water to supply all allotments (six priorities) until the middle of May. The flow decreased for the rest of the season with enough to supply the first and second priorities. Importation of water from the Little Truckee River began July 19, supplementing the natural flow of Webber Creek to help satisfy all allotments of the Sierra Valley Water Company shareholders (one priority). A total of 1653 acre-feet of water was diverted through the Little Truckee Ditch during the irrigation season.

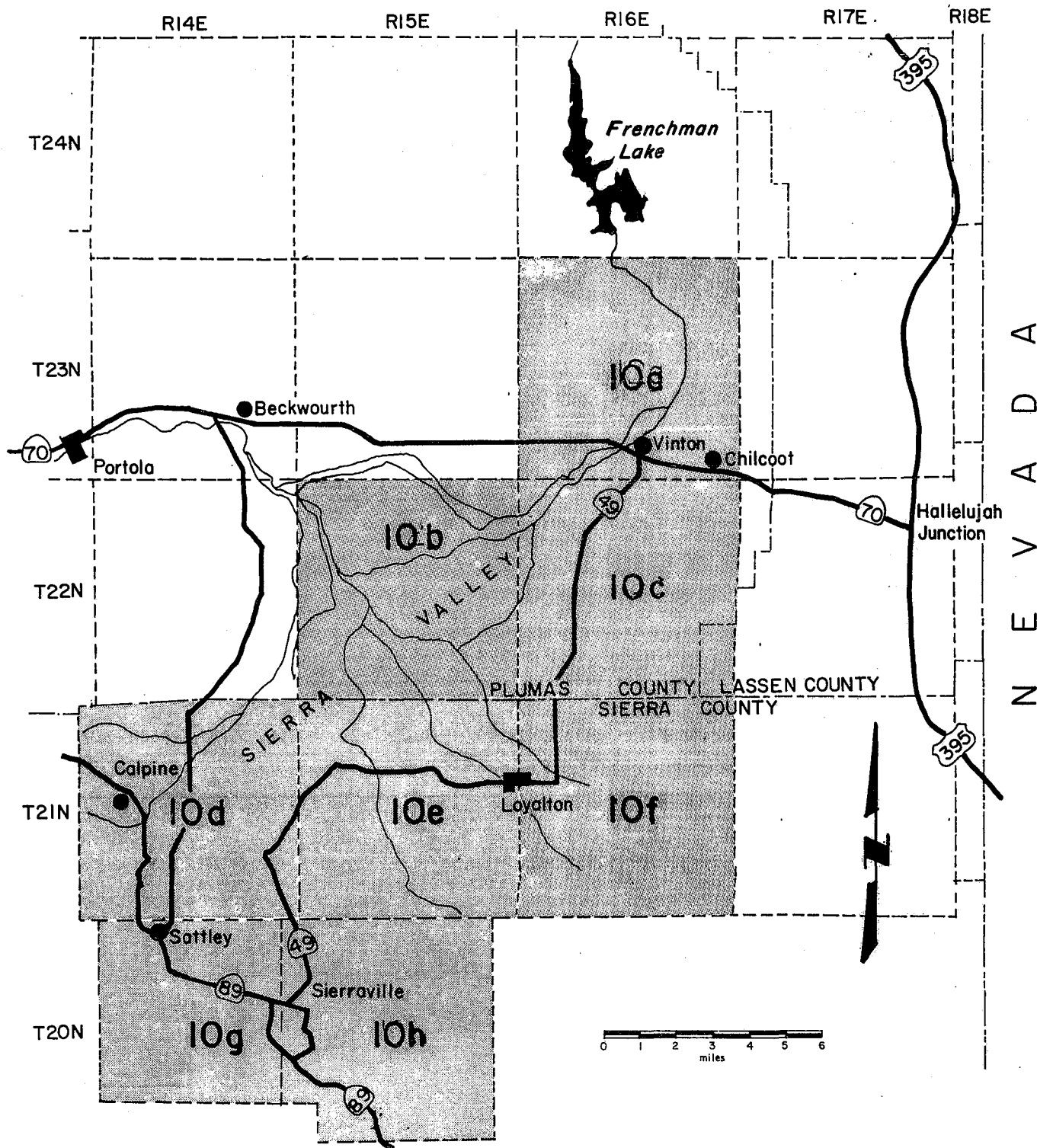
West Side Canal Group

The flow in this system, consisting of Hamlin, Miller and Turner Creeks, was sufficient to satisfy all allotments (five priorities) for the entire season.

Fletcher Creek and Spring Channels

Ample water was available to satisfy all allotments until about August 15, after which the flow slowly decreased for the rest of the season.

Figure 10



INDEX MAP
MIDDLE FORK FEATHER RIVER
WATERMASTER SERVICE AREA

TABLE 30

DIVERSIONS FROM MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

<u>Diversion Number</u>	<u>Decreed Owner</u>
21,22,23,73,92,98,99,100,106	Guidici, F. P., et al
23,26,27,28	Golden, E. H.
24,25	Sobrio, G.
28,29,30,31,67,92,108,115,116,119, 225,226,230,231,238,158,159,161,162, 261,229,94,95,96,97	Dotta, F., et al
31,32,57,58,59,60,70,110,113,114,226	Ramelli, E., et al
31,33,34,108,118	Ede, P., et al
35,36,37,57,58	Goble, E. J.
37,38,61,62,63	Scott, D. M.
39,43,44,46,50,51,64,65,66,79,80	Laffranchini, C. D., et al
39,41,41,42,65,66,68,71,72,238	Huntley, J. F.
43,44,45,67,68,69,70	Roberti, J.
47,48,49	Bonta, J. A.
52,53,242	Maddalena, L. D.
56,57,67,70,72,114,118,205,206,207, 208,209,210,214,212,224,219,220,239, 225,226,227,228,229,235,236,234,238, 240,241,242	Humphrey, M. B., et al
70,238	Scolari, et al
77A	Trosi, E. J., and Conradt, D.
77,78,88,89,81,82,83	Clover Valley Lumber Company
82,87	First National Bank of Nevada
86,87,89,253	Rees, J. S.
90,91,110,93,100,101	Dory, M., et al
93,100,101	Keyes, C. V.
90	Grandi, O.

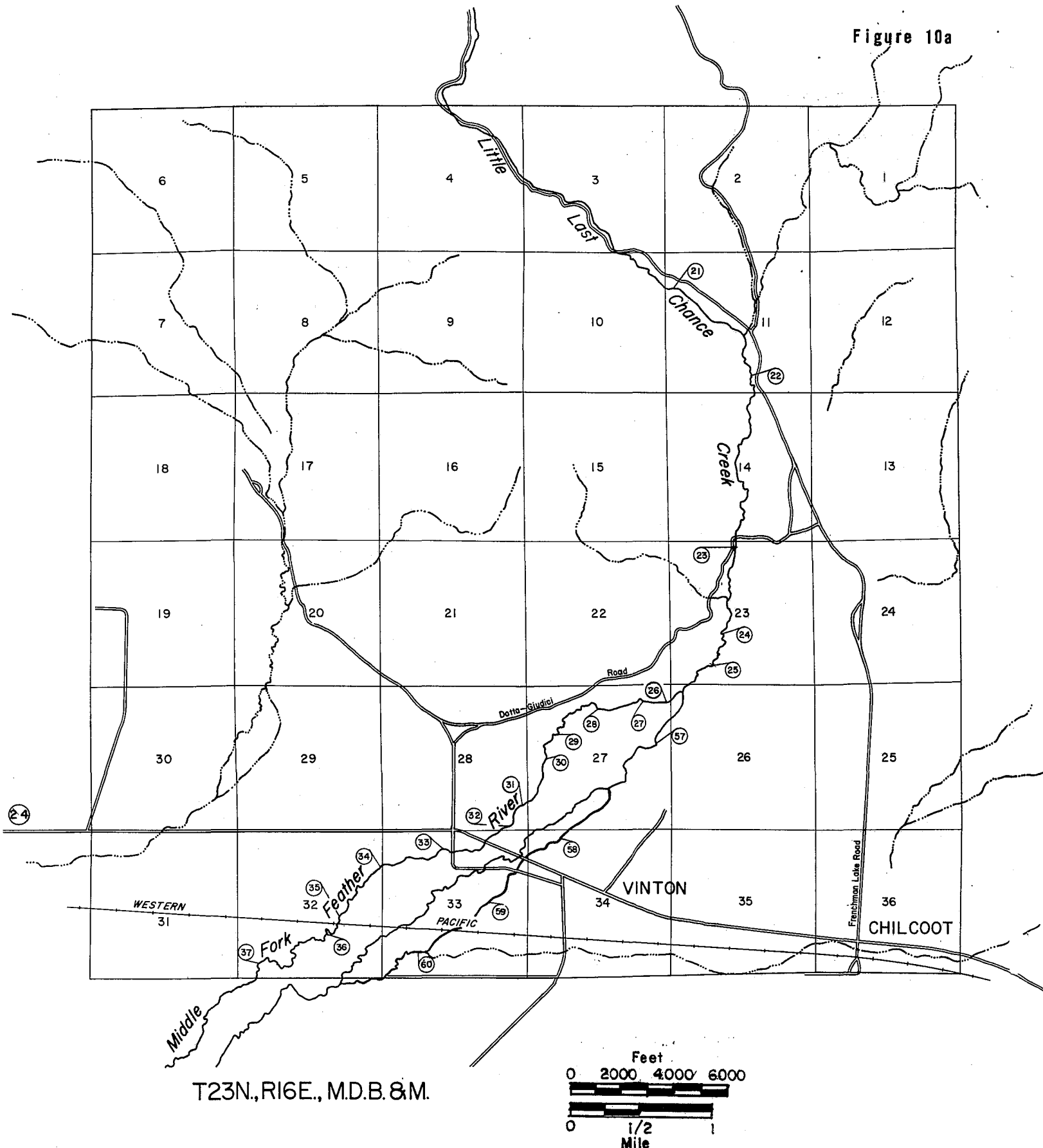
TABLE 30 (Continued)

<u>Diversion Number</u>	<u>Decreed Owner</u>
110,81	Lombardi, L. S.
110	Sierra Valley Bank
102,103,111,112,110,226,229	Genasci, J., et al
114,116,117,108,109	The Federal Land Bank of Berkeley
119,237	Bradley, F. A., Jr.
160, 161	Strang, A. E.
167,168,169,170,171,173,174,177	Martinetti, D. R.
172,177,178	Cavitt, J. H.
174,202	Myers, B. F., et al
174,175,189,195,199,200	Devine, K. L., et al
175,184,186	Church, A. B.
175	Benninger, et al
175,187,202,180,181,182,183,184,185	Turner, et al
176,148,133	Adams, H. G., et al
180,188,194,198	Freeman, F. W.
189,191,202,204,205,176,221	Pasquetti, I., et al
176,203,144,154,222	Henderson, G. A., et al
211,214	Matley, J. B.
213,214,215	Berry, F.
213,216	Ghidossi, E. F.
216,217	Viscia, A. A.
220,239,234	Albini, H.
192,193,196,197	Davies-Johnson Lumber Company
127,134	Linebaugh, S. C.
155	Amodei, J.
133,156,157	Morgan, J. W.

TABLE 30 (continued)

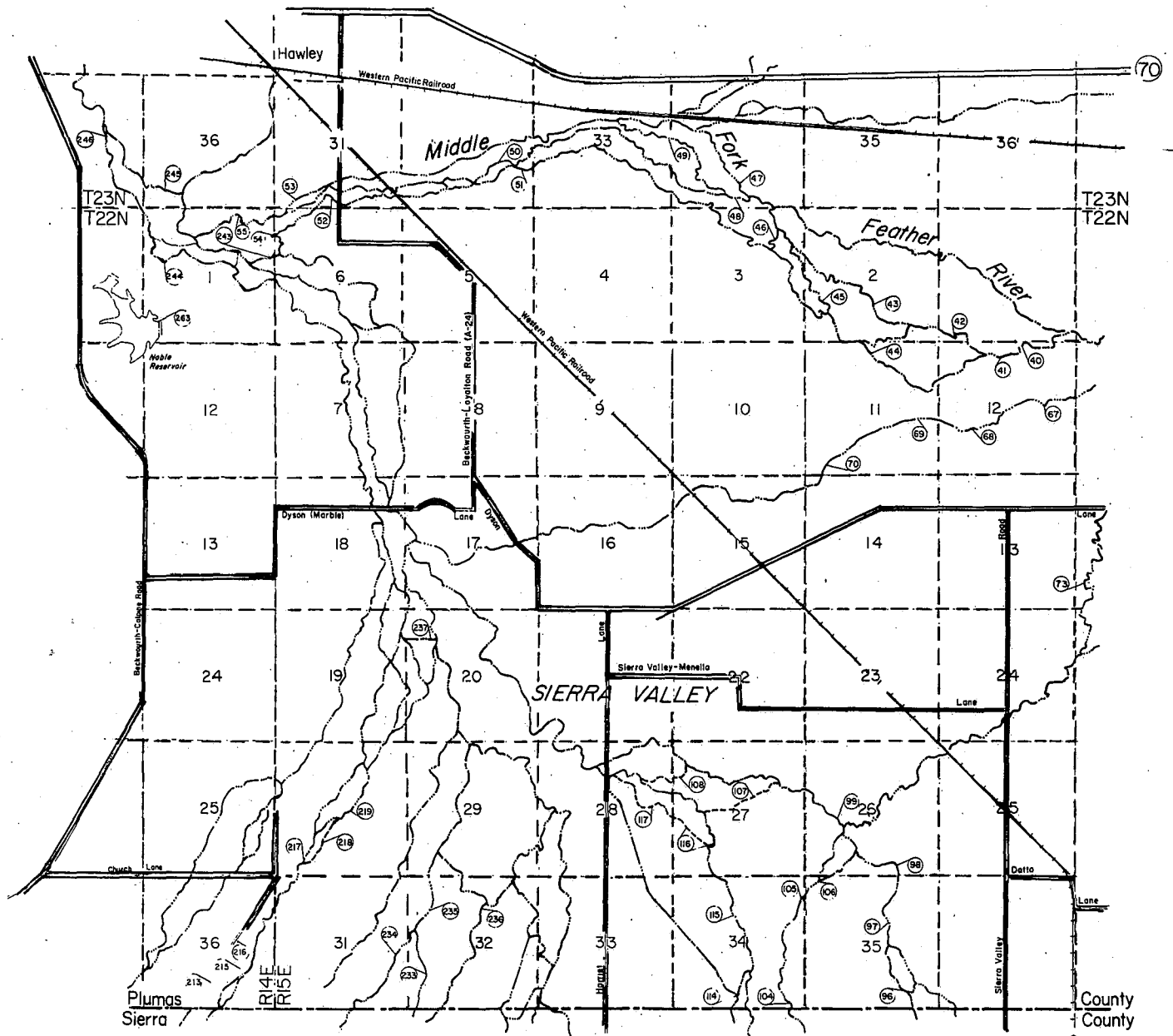
<u>Diversion Number</u>	<u>Decreed Owner</u>
128,128A,131,132,145,258,133,134	Johnson, D. L., et al
140,256	Alpers, F. P.
129	Dellera, K. N.
142,143,255	Torri, G.
129,258A,133,134,137,146,147,149,152	Miller, A. B., et al
145	Diltz, W. A.
130	Randolph Water Company
134	McIntosh, J. A.
134	Dolley, F.
135	Wilson, G. L.
145	Weber, M. E.
136,137,138,139,147,148A	Bony, F. G.
148,149,150,151	Law, S.
222,223	Vanetti, A.
246	Falchi, G.
226,232,233	Filippini, J.
246,247	Carmichael, C. R.
238,243,244,245,263,54,55	Westover, L. H., et al

Figure 10a

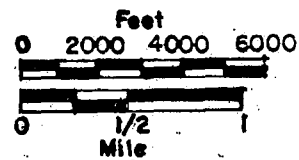


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 10b

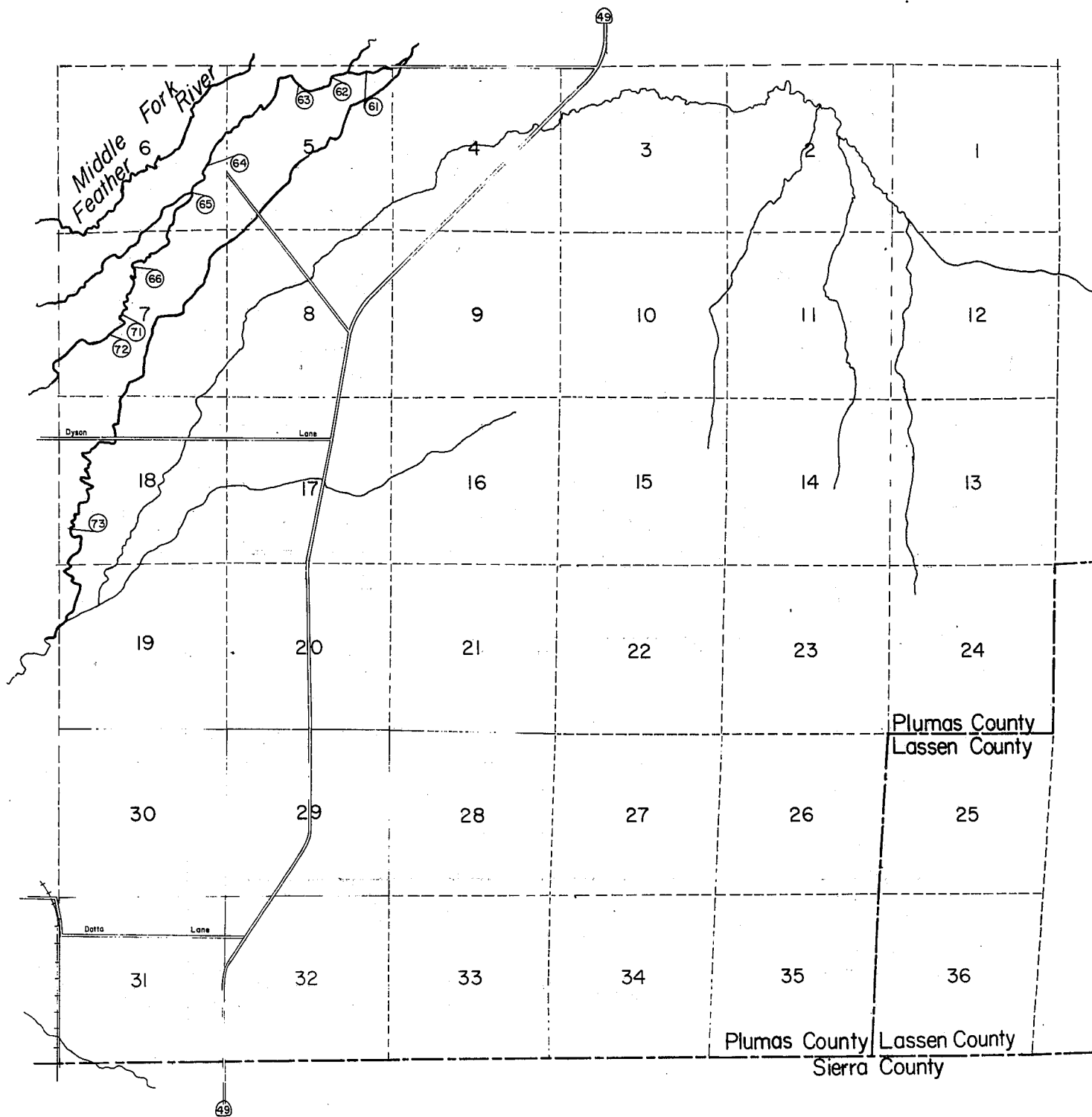


T22N. and T23N., R14E. and R15E., MDB & M

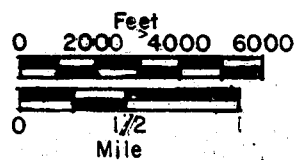


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 10c

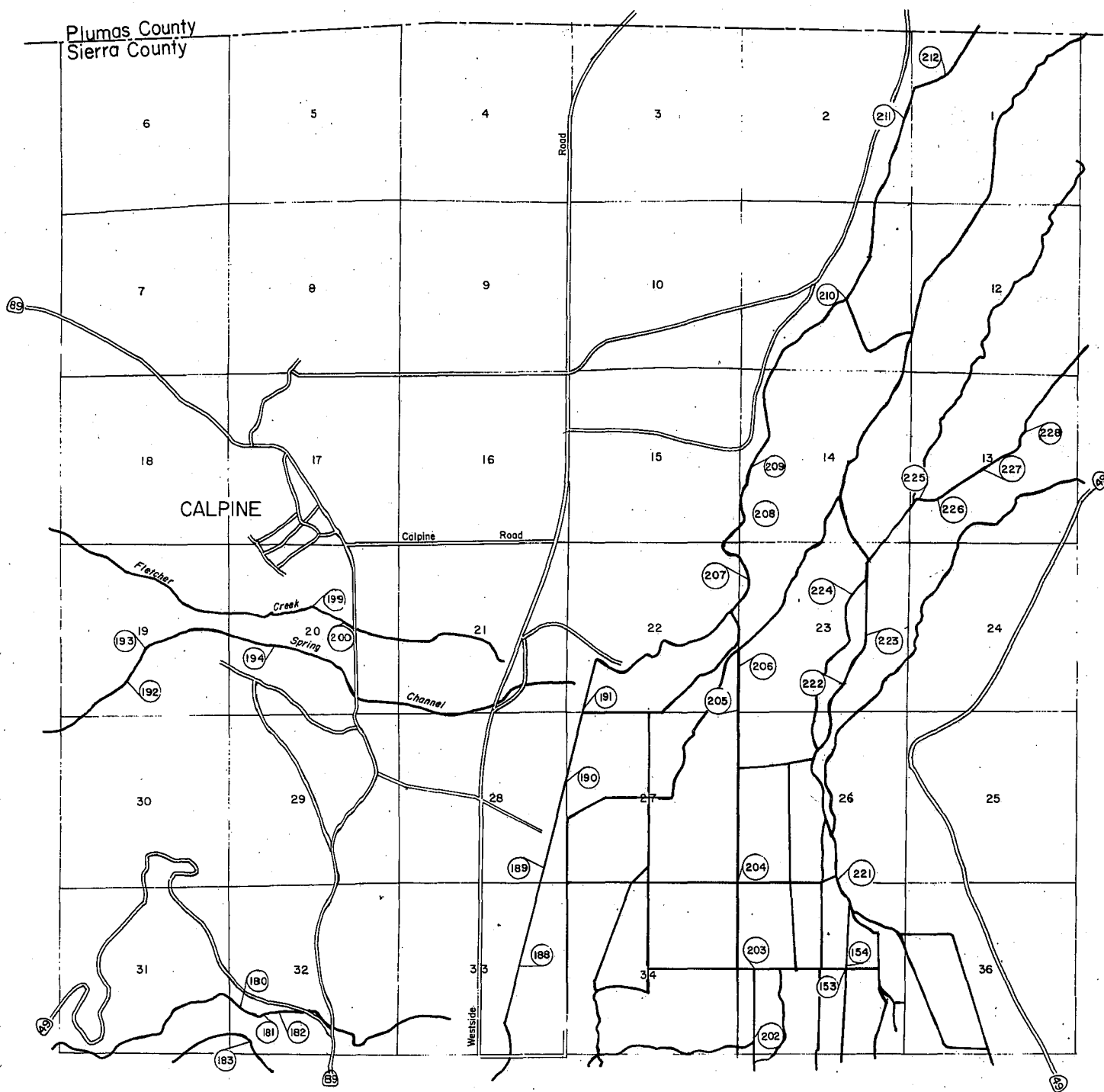


T22N., R16E., M.D.B. & M.

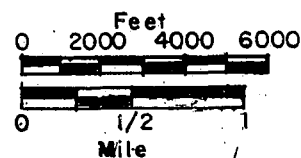


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 10d

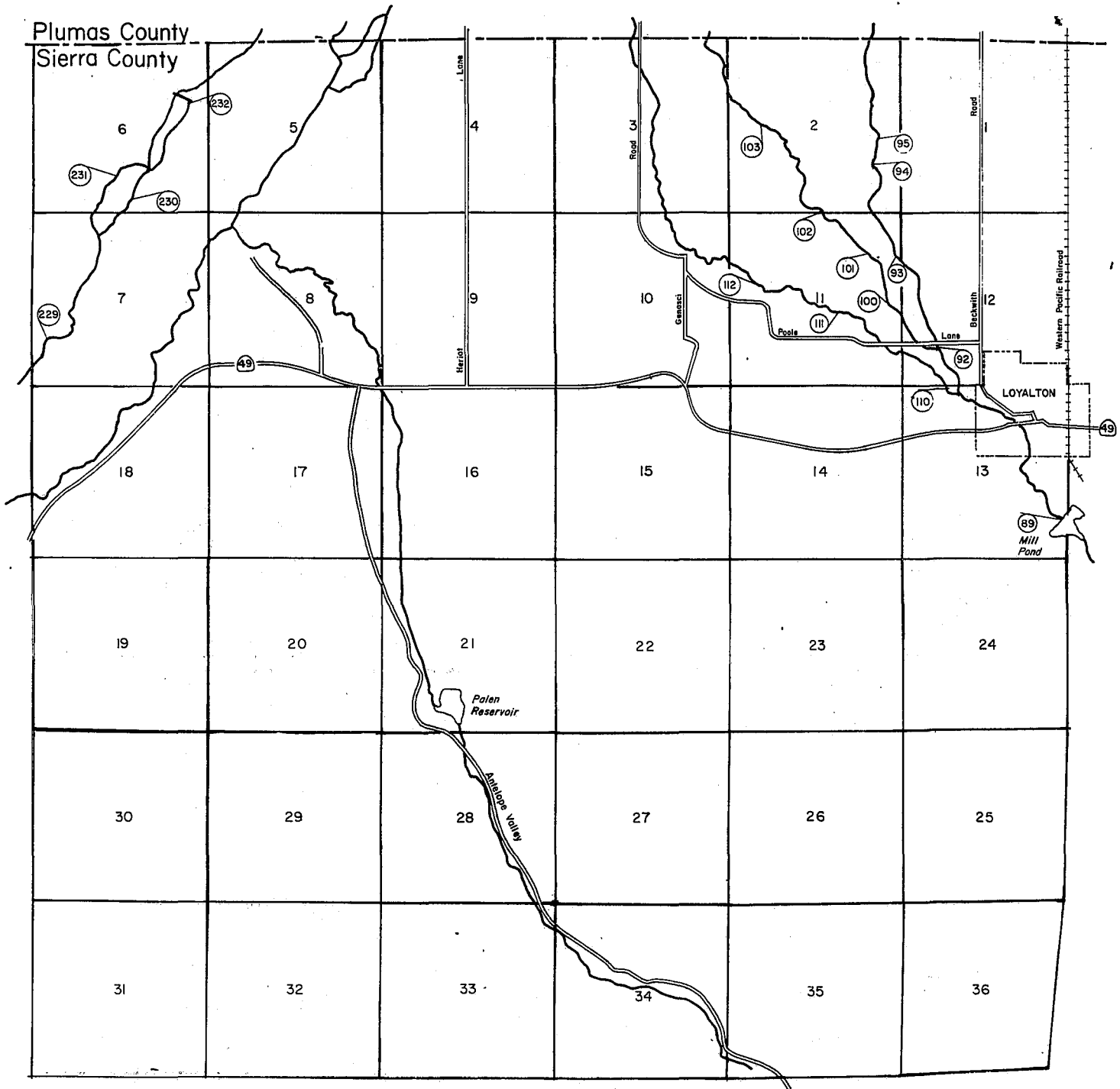


T21N, R14E, M.D.B. & M.

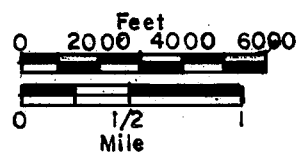


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 10e

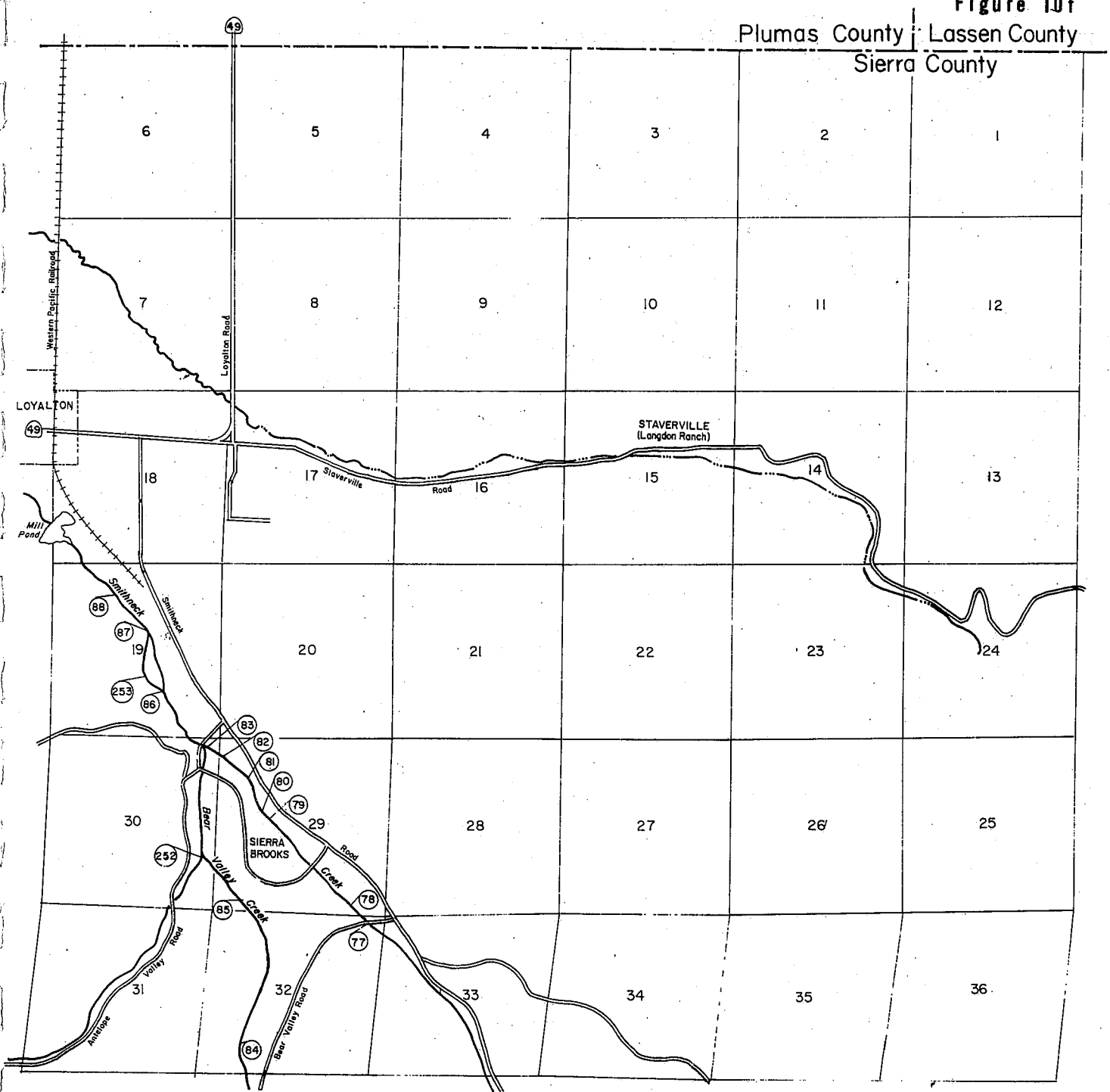


T21N., R15E., M.D.B. & M.

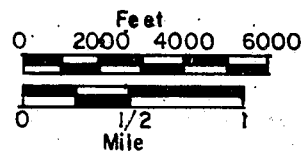


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 10f

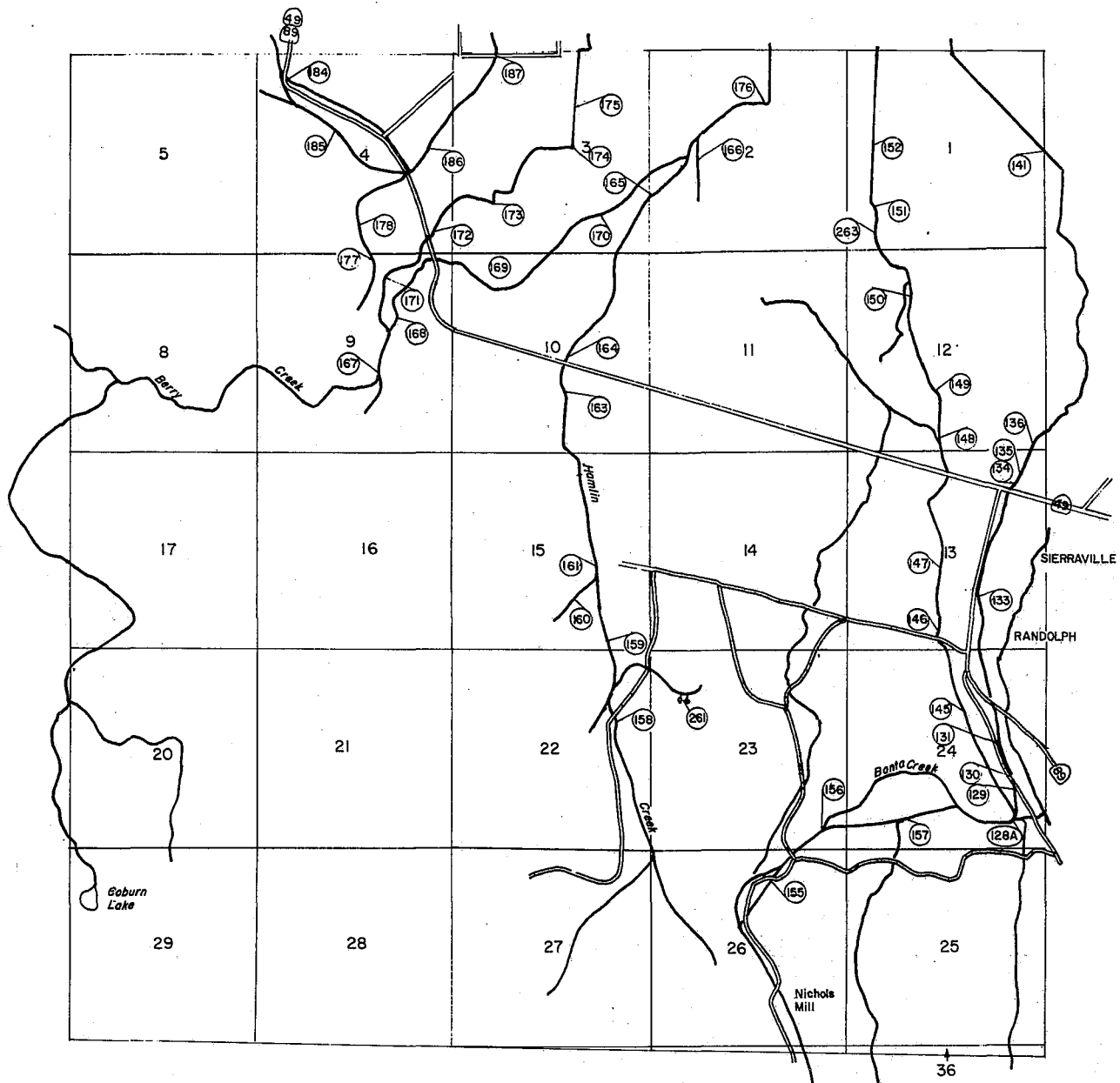


T2IN, R16E., M.D.B. & M.

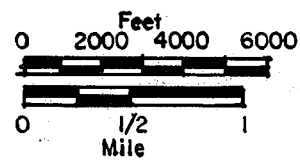


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 10g

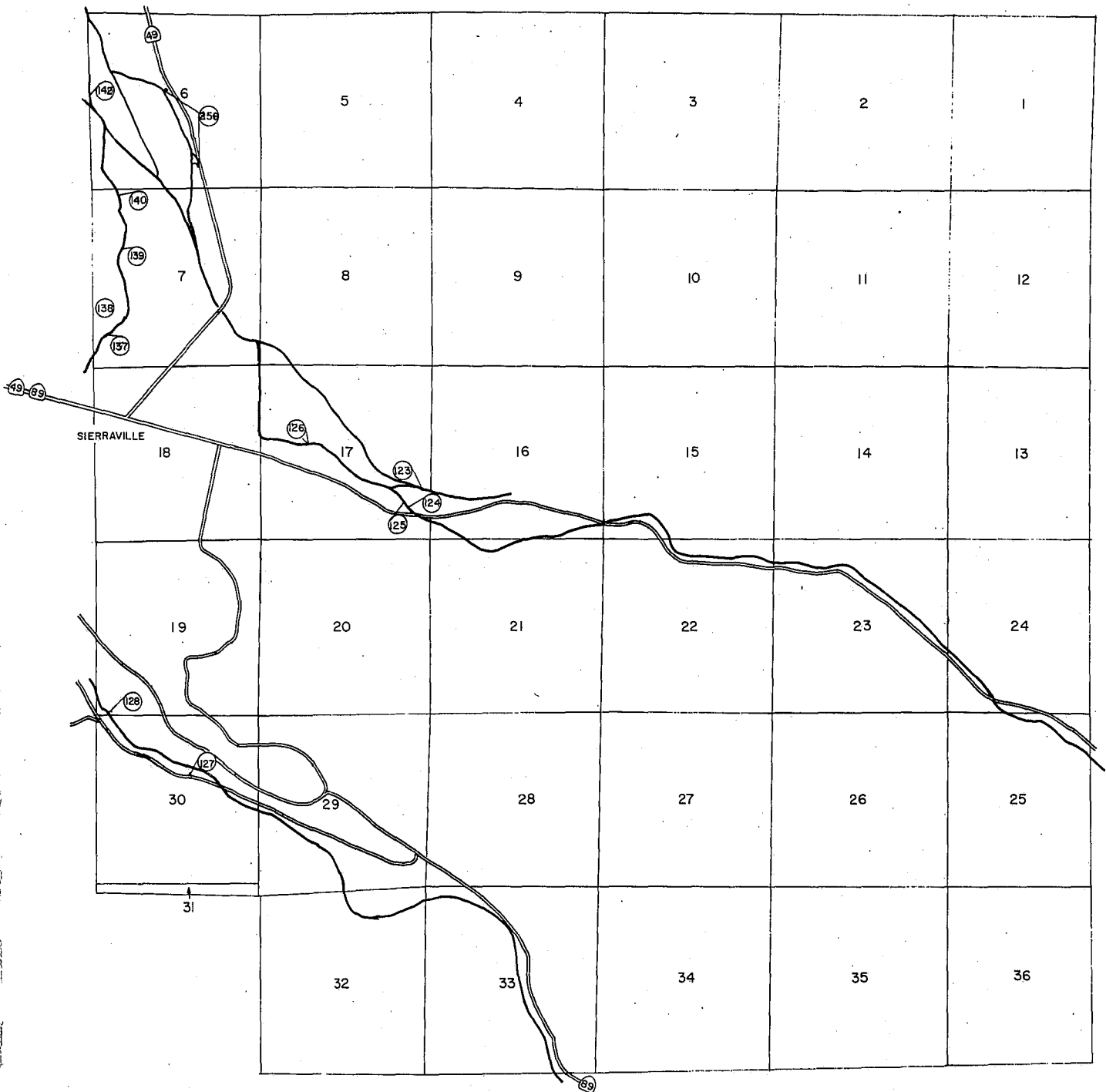


T20N.,R14E.,M.D.B.&M.

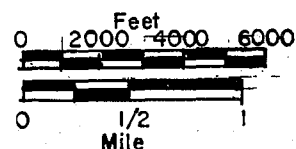


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 10h



T20N., R15E., MD.B. & M.



MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 31

1983 Daily Mean Discharge
(In cubic feet per second)

LITTLE TRUCKEE DITCH AT HEAD

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1						22.8	9.2	1
2						22.4	7.6	2
3						21.9	6.5	3
4						21.0	5.9	4
5						19.7	5.4	5
6						18.9	4.9	6
7						18.4	4.6	7
8						17.6	4.4	8
9						16.8	4.2	9
10						16.4	3.9	10
11						15.2	3.7	11
12						13.7	3.4	12
13						13.0	3.2	13
14						12.6	3.0	14
15						14.5	3.0	15
16						13.3	2.8	16
17						12.2	2.8	17
18						11.2	2.6	18
19					3.0	13.0	2.6	19
20					12.4	11.9	2.6	20
21					27.0	13.0	2.6	21
22					27.5	14.5	3.2	22
23					27.5	10.8	3.9	23
24					27.0	9.5	3.2	24
25					26.0	8.6	3.0	25
26					24.2	7.6	3.7	26
27					23.3	7.0	3.4	27
28					22.8	6.5	3.2	28
29					22.8	6.2	4.4	29
30					23.3	5.7	3.0	30
31					23.3	7.6	3.0	31
MEAN					290.1	423.5	119.9	MEAN
AC-FT					575.4	840.0	237.8	AC-FT

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 32

1983 Daily Mean Discharge
(In cubic feet per second)

MIDDLE FORK FEATHER RIVER NEAR PORTOLA

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	3132	1220	1852	1514	250	73	82	1
2	4193	1356	1666	1569	250	71	77	2
3	3439	1312	1461	1601	242	71	74	3
4	1617	1213	1484	1577	233	71	71	4
5	1895	1106	1241	1484	222	71	68	5
6	1562	1035	1248	1408	211	71	67	6
7	1385	990	1248	1341	200	68	65	7
8	1334	930	1213	1248	190	68	64	8
9	1305	906	1193	1159	182	68	62	9
10	1276	883	1200	1073	175	68	61	10
11	1269	877	1207	1041	173	76	61	11
12	1341	906	1207	972	168	76	61	12
13	2884	912	1200	936	161	74	60	13
14	7323	894	1186	894	156	70	58	14
15	5516	877	1139	865	149	68	57	15
16	3201	860	1041	826	143	67	56	16
17	2585	843	972	765	138	65	53	17
18	2216	848	1139	702	130	62	53	18
19	2020	843	1193	662	124	65	52	19
20	1765	871	1186	552	120	67	49	20
21	1732	960	1067	470	110	70	48	21
22	1783	1028	1086	442	103	80	49	22
23	1683	1112	1152	418	97	87	52	23
24	1869	1241	1227	399	90	90	56	24
25	1939	1438	1291	376	85	96	60	25
26	1852	1626	1341	351	82	99	65	26
27	1577	1577	1408	323	79	99	71	27
28	1378	1601	1453	294	71	97	71	28
29	1213	1783	1476	284	74	94	74	29
30	1092	1904	1484	262	73	89	82	30
31	1119		1461		71	84		31
MEAN	68495	33953	39722	25808	4552	2375	1879	MEAN
AC-FT	135860	67346	78789	51190	9029	4711	3727	AC-FT

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

The North Fork Cottonwood Creek service area is in Shasta County near the town of Ono, west of Redding. Figure 11, page 86, shows the North Fork Cottonwood Creek stream system including the diversions and roads.

The source of water for this service area is the North Fork of Cottonwood Creek and its two major tributaries, Moon Creek and Jerusalem Creek. The North Fork of Cottonwood Creek flows through the service area in a southeasterly direction to where it joins the other two major forks of Cottonwood Creek and then to the Sacramento River east of the town of Cottonwood. The service area consists of sparsely scattered parcels, some in hilly terrain and some in the valleys.

Basis of Service

The water rights of this creek system were determined by court reference and set forth in Decree No. 5479, Shasta County Superior Court, dated June 9, 1920. The North Fork Cottonwood Creek watermaster service area was created September 11, 1929, although service had been provided intermittently in accordance with the decree since 1924. All water rights are of equal priority.

Water Supply

Snowmelt contributes to the flow in the North Fork Cottonwood Creek system during the early part of the irrigation season, and perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands except in dry years, when the available supply may be as low as 20 to 40 percent of the decreed allotments.

A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table 33, page 87. This gaging station is downstream from most diversion points on the creek but gives a general indication of the water supply.

Method of Distribution

The general practice throughout the area is to irrigate by wild flooding. One water user pumps directly from the creek, using a sprinkler system to irrigate his crops. Pumping was necessary at this diversion point because the irrigated land was considerably higher than the creek channel.

1983 Distribution

Watermaster service for North Fork Cottonwood Creek began June 1 and continued through September 30. Kenneth E. Morgan, Water Resources Engineering Associate, was watermaster.

Streamflow was sufficient to meet all water right allotments throughout the irrigation season with some surplus below the lowest user.

86

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

TABLE 33

1983 Daily Mean Discharge
(In Cubic Feet Per Second)

COTTONWOOD CREEK NORTH FORK NEAR IGO

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	4730	1340	929	267	85	33	38	1
2	5350	1120	808	256	85	33	32	2
3	4540	975	721	241	81	32	28	3
4	2850	870	795	243	78	30	26	4
5	2190	793	1070	232	75	31	26	5
6	1770	733	878	221	73	30	25	6
7	2480	681	763	208	74	29	24	7
8	1600	648	685	197	75	27	17	8
9	1310	637	626	185	73	24	17	9
10	1210	598	573	176	72	24	17	10
11	1120	568	531	166	69	25	16	11
12	2920	528	502	154	65	24	16	12
13	3630	490	475	147	63	24	16	13
14	1990	460	455	142	60	24	16	14
15	1390	380	423	134	56	23	15	15
16	1160	318	309	129	55	21	14	16
17	1170	315	298	124	54	20	14	17
18	1290	325	295	119	54	17	14	18
19	971	378	300	113	53	19	14	19
20	1090	411	308	108	53	24	14	20
21	1840	362	317	104	48	23	14	21
22	2130	354	317	99	45	30	49	22
23	1820	784	310	94	44	28	52	23
24	1940	748	299	92	42	24	31	24
25	1320	586	299	90	38	23	25	25
26	1190	511	293	87	39	22	22	26
27	1720	667	301	85	38	21	21	27
28	1200	1220	314	84	37	21	22	28
29	2070	1060	307	83	36	20	21	29
30	2330	1280	290	84	35	22	30	30
31	1750	---	275	---	34	33	---	31
MEAN	2067	671	486	149	58	25	23	MEAN
AC-FT	127080	39950	29880	8850	3550	1550	1360	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends southward from the Oregon border about 45 miles to just south of Alturas.

The North Fork Pit River flows in a southerly direction from the south rim of Goose Lake Basin to its confluence with the South Fork Pit River west of Alturas. The basins of Goose Lake and the North Fork Pit River may be considered completely separate since the lake has not spilled into the river for nearly 100 years.

Nine small independent streams draining the west slope of the Warner Mountains and generally following a westerly direction constitute the major source of water. Three of these (New Pine, Cottonwood, and Davis Creeks) are tributary to Goose Lake. Five are tributary to the North Fork Pit River. From north to south, they are: Linville, Franklin, Joseph, Thoms, and Parker Creeks. The other one is Pine Creek near Alturas.

The place of use in the northern half of the area is a relatively long, narrow, sloping strip extending between the east shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams. The elevation of the places of use range from about 4,350 feet just below Alturas to about 5,200 feet at the upper portions on some of the creeks.

Maps of the North Fork Pit River watermaster service area and of the separate stream systems within the area are presented as Figures 12 through 12j, pages 93 through 113.

Basis of Service

Table 34, page 92, briefly outlines the five decrees covering the area and presents data on the establishment of watermaster service and water rights.

The Pine Creek agreement established water rights on Pine Creek November 22, 1933, and this stream was added to the South Fork Pit River area on January 22, 1935. Pine Creek Reservoir, a small reservoir above all diversions, was originally used for power generation. Now a recreation site, it has a small water right but is not in the service area and was added to North Fork Pit River area on July 1, 1982. The Pine Creek agreement establish two priorities.

A large reservoir, West Valley Reservoir, was built in 1937 to increase the supply and extend the season for irrigation in the South Fork Irrigation District. The water rights for use from West Valley Reservoir total 23,100 acre-feet.

Water Supply

The water supply comes mainly from snowmelt for all streams in the North Fork Pit River service area except Linville Creek, which, having a relatively small

drainage area, is almost entirely spring-fed. After mid-June, the rest of the streams also depend on springs, but diminish rapidly until mid-July, after which the flow remains fairly constant. There are several small reservoirs in the area, but they are used essentially for regulatory storage.

Method of Distribution

Distribution is accomplished by diversion structures in the main channels diverting into ditches that convey the water to its place of use. Wild flooding from small feeder ditches is the common method of application. There is, however, increasing use of sprinkler systems, some directly from ditches, with supplemental ground water being added as the surface flow diminishes. Subirrigation by the use of large flashboard dams to raise the water level in the channel is practiced along the North Fork Pit River between Parker Creek and Alturas.

1983 Distribution

Watermaster service in the North Fork Pit River service area began April 1 and continued through September 30. Charles Hodge, Water Resources Technician II was watermaster during this period and Keith Dick, Water Resources Technician II, as watermaster on Pine Creek.

The 1983 irrigation season was the best in years due to the near record snowpack and record precipitation between July 1 to May 1. But the low temperatures so late in the season, only eight days had above freezing lows April 1 to May 23. The high temperatures did not reach 70 degrees until May 21. Kept the growth at a slow rate. The water supply was very high during May and June, but started decreasing very rapidly in July to the end of the season.

New Pine Creek

There was surplus water to all the users from April 21 through July 20. On July 1, when the schedule changes from proration (or correlative rights) to the priority system the flow was sufficient to supply all 4th priorities until July 25. A steady recession in the flow continued the rest of the season on September 30 first and 80 percent of second priorities was available.

Cottonwood Creek

The flow was adequate to supply all priorities to June 27. On July 17 only first priorities could be filled. Thereafter, the flow dropped off until on September 30; only stock water was available.

Davis Creek

There was surplus flow in Davis Creek from May 21 through June 21. It receded for the rest of the season; on September 30 it was only 3.6 cfs.

Linville Creek

The flow in Linville Creek is spring fed with very little fluctuation. Full second priorities could not be filled. Peak daily mean flow was 6.2 cfs and minimum daily mean flow was 2.6 cfs on September 30 only 67 percent of first priorities was available..

Franklin Creek

The flow was sufficient to fill all priorities May 16 through June 14. On July 20, only 22 percent of third allotments could be met. On September 15, when the winter schedule starts, the flow was 3.1 cfs.

Joseph Creek

Streamflow exceeded all allotments April 1 through July 5. From August 4 to end of season only a part of first priorities could be met.

Thoms Creek

Streamflow exceeded all allotments April 1 through July 4. First and second priorities were met until July 21. On September 30 only first priorities could be filled.

North Fork Pit River

There was a surplus water until July 9. Then the flow gradually decreased until July 23, when first and second priorities could be met. On August 1, only 53 percent of seconds could be filled.

Parker Creek

There was surplus water April 1 through July 10. Flow receded very fast on August 1. The flow was 3.6 cfs, or 21 percent of third priorities. There are no second priorities on Parker Creek.

Shields Creek

There was surplus supply in Shields Creek until July 24. A steady decrease in flow followed for the rest of the season. On September 30, flow was 2.9 cfs, enough to fill first and 36 percent of second priorities.

Pine Creek

Total stream runoff available April 1 through September 30 was 17,160 acre-feet. From the middle of May to after the first of July there was excess water in the stream. The Federal Game Refuge did not want any water delivered to Dorris Reservoir this season due to new outlet gates being installed. During June and July all users were trying to dry up hay fields.

TABLE 34

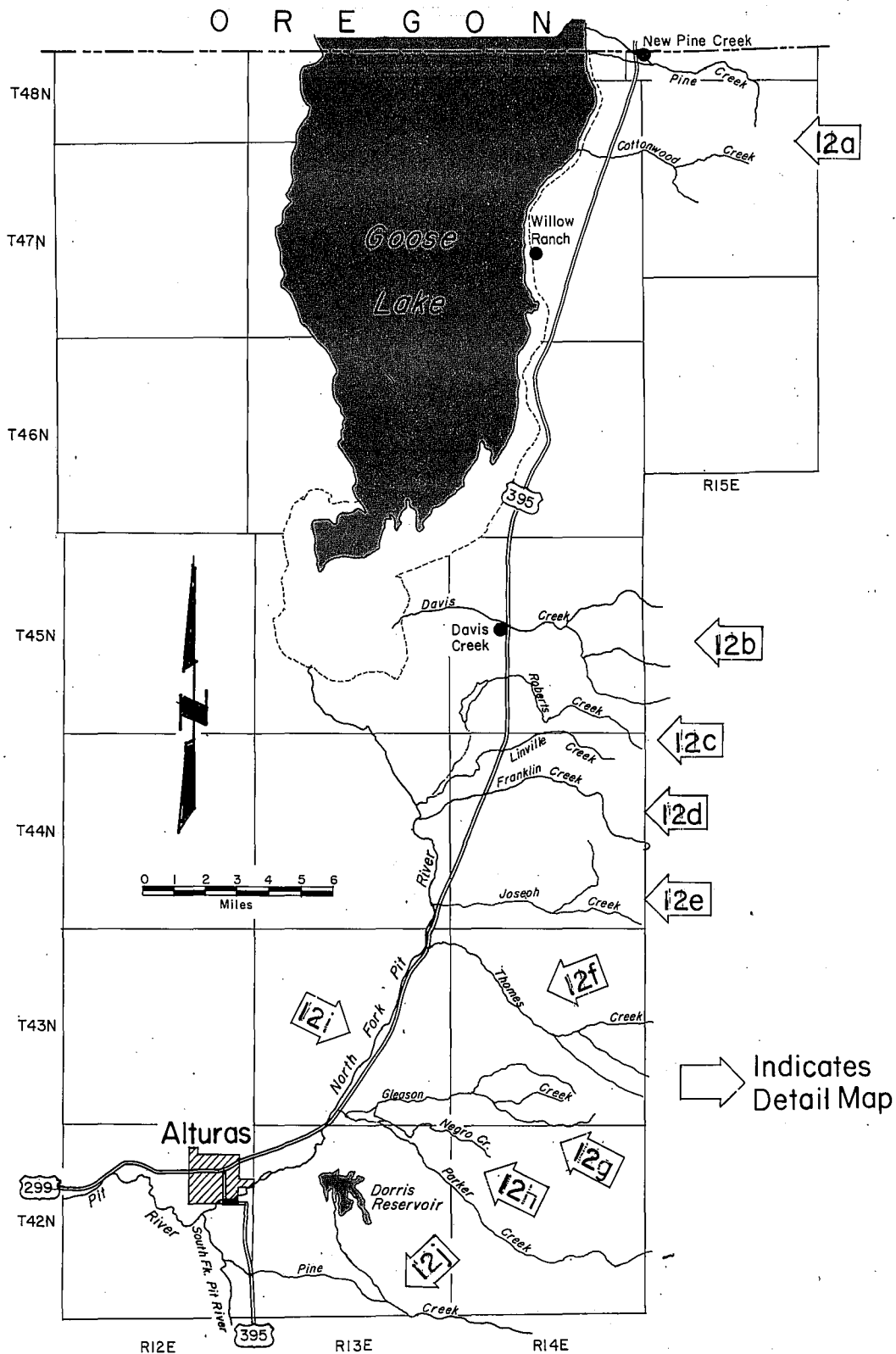
DECREES AND RELATED DATA - NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Stream	Modoc County Superior Court Decree			Service Area Created	No. of Water Right Owners	Total cfs	Remarks
	No.	Date	Type ^{a/}				
New Pine Creek	2821	6-14-32	CR	6-22-32	21	22.18	
Cottonwood Creek	2344	5-03-40	CR	12-13-40	5	15.35	When water for Diversion Creek No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4
Davis Creek	2782	6-30-32	CR	7-13-32	19	52.70	four priorities, 4-1 to 9-15. Some rights vary according to flow available. Most first & second priorities are year-round. One second priority right is for 0.40 cfs export for Roberts Creek.
					2b/		Appropriative Permit 9825 allows diversion from North Fork Davis Creek and License 10549 to divert from Davis Creek, both for the period from 10-1 to 5-1.
Franklin Creek	3118	9-08-33	CR	9-14-33	4	11.66	four priorities. The first priority and all second priority rights are year-round, except one which is equal to all the others--1.46 cfs-- and is for the period 9-15 to 3-31 annually. Third and fourth priorities are for 4-1 to 9-30 each year.
North Fork Pit River	4074	12-14-34	S	12-18-39	10	51.73	five priorities, 4-1 to 9-30. Pit River Dorris Reservoir water diverted through Parker Creek ditch on Parker Creek. fourth and fifth priorities are special class.
Linville	4074	12-14-39	S	12-18-39	3	8.30	two priorities.
Joseph	4074	12-14-39	S	12-18-39	6	11.98	four priorities, 4-1 to 9-30. Diversions on south side of stream, with the exception of No. 26, are on net consumptive use basis.
Parker	4074	12-14-39	S	12-18-39	7	18.07	four priorities, 4-1 to 9-30. Diversion on Dorris Reservoir shown on North Fork Pit River schedule is made at No. 120, Parker Creek Ditch.
Shields	4074	12-14-39	S	12-18-39	5	7.50	four priorities, 4-1 to 9-30.
Thoms	4074	12-14-39	S	12-18-39	9	6.44	three priorities, 4-1 to 9-30.
						9.40	5.0 cfs export to Cedar Creek; and 4.40 cfs export to Stony Canyon.
Gleason	4074	12-14-39	S	12-18-39	4	4.45	five priorities.
Pine		11-22-33		1-22-35	16	60.00	Surplus flow diverted into Doris Reservoir.

a/ S-Statutory, CR-Court Reference.

b/ Appropriative rights, junior to the decreed rights.

Figure 12



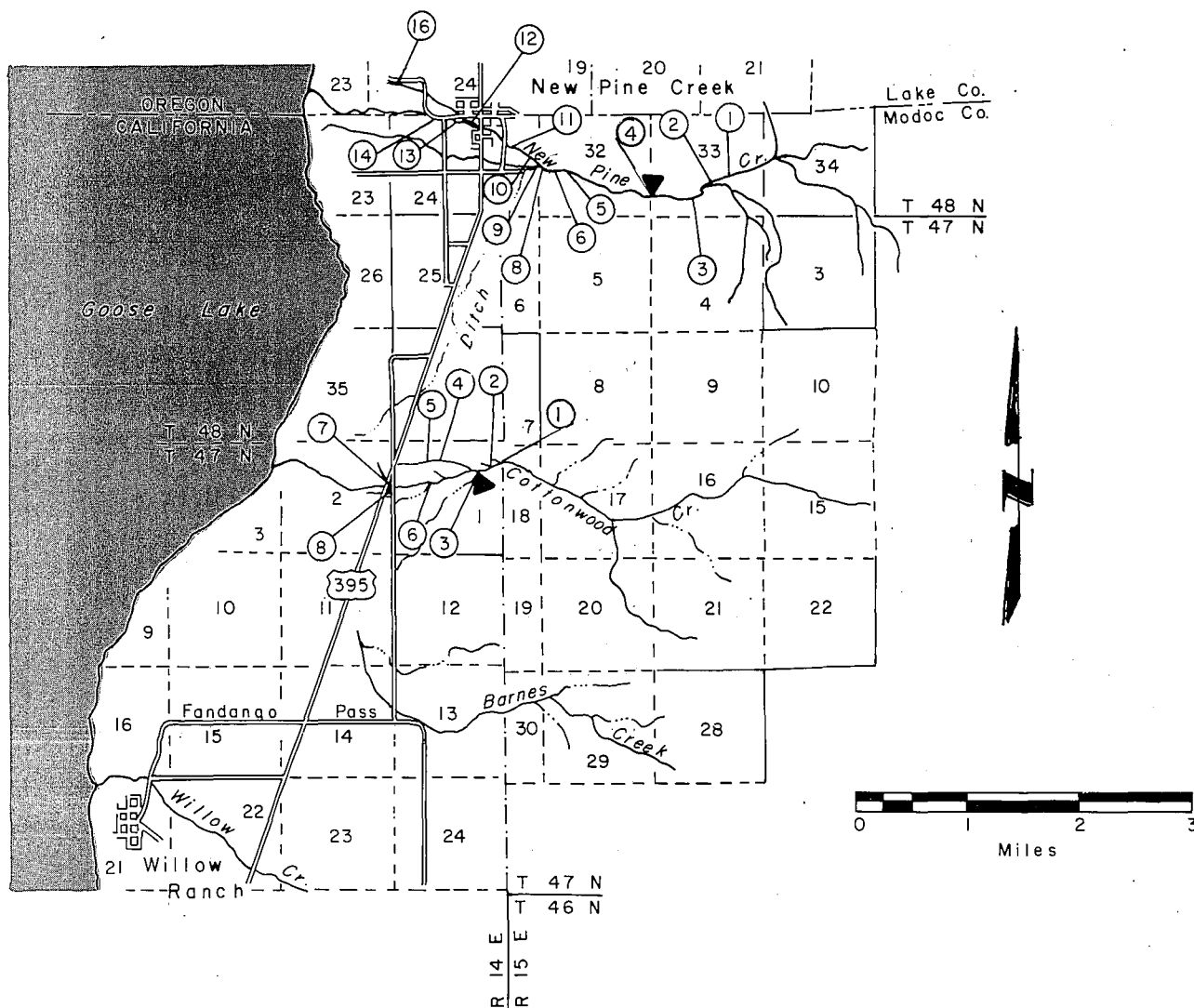
INDEX MAP NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

TABLE 35

DIVERSIONS FROM NEW PINE CREEK AND COTTONWOOD CREEK

<u>New Pine Creek</u>		
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1,2,3	Clemons	0.23
4	Fernwood	0.18
5,8,9	Butler	0.65
	Butler	0.51
6	Brocco	0.02
	Guerne	0.03
	Stevens	0.33
	Beachler	0.15
8	California Ditch	
	Nelson	0.70
	Stringer	1.39
	Cunduff	0.57
	Withrow	0.33
	Cundiff	0.66
	Pochop	0.30
	Cole	0.08
	Cloud	0.62
	Vincent	0.55
	Lawson	1.04
9,10	Beachler	0.97
11	Bontin	0.02
12	Johnston	0.02
13	Lawson	8.48
14,16	Lawson	3.89
<u>Cottonwood Creek</u>		
1,2	Larkin and Van Volkinburg	1.60
3	Fleming and Noble	4.60
3	Perry	2.30
4,7,8	Weidner	4.10
5	Fleming and Noble	1.15
6	Panther	1.60

Figure 12a



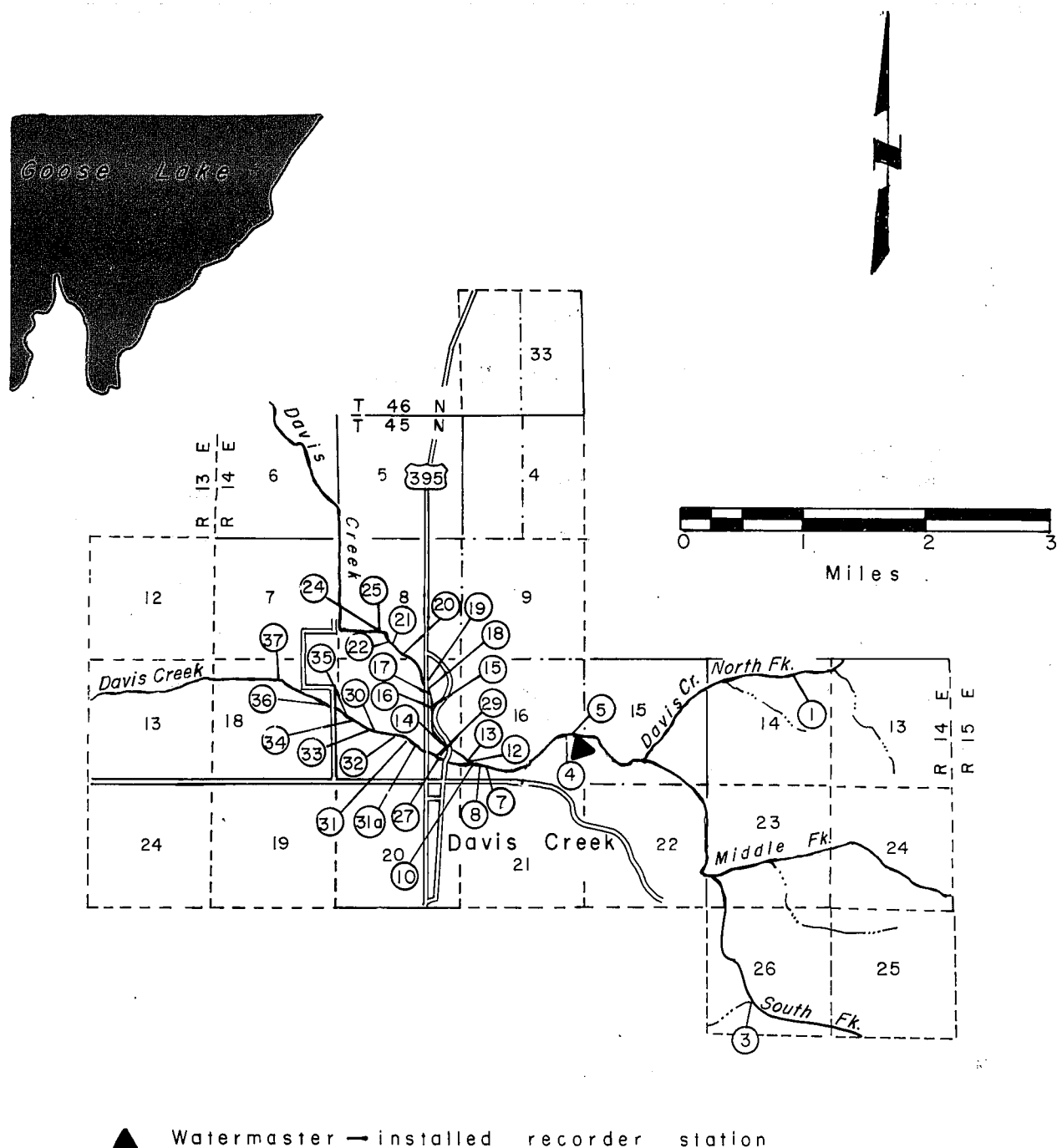
▲ Watermaster—installed Recorder Station

DIVERSIONS FROM COTTONWOOD AND NEW PINE CREEKS, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 36
DIVERSIONS FROM DAVIS CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Pangborn	0.40
3	Gardner	0.40
4,5	Baker	1.15
4,8	Eddie	0.95
5	Mann	0.125
5,14	Eagleston	0.15
7	James	0.11
7	Shedd	0.04
7	McMasters	0.06
7	Ramsey	0.09
8	Pointere	0.04
8	Grivel	0.06
8	Brunnemer	0.15
8	Agnew	0.15
10	Reith	0.20
5,12,13, 16,30,31	Tilson	1.40
5,16,19 20,22,24	Goose Lake Land and Cattle Company	5.55
5,15, 17,19	Ingraham	1.50
21	Foothill Plumbing	0.65
1,27,29 32-37	Triple S Land and Cattle Company	39.45

Figure 12b

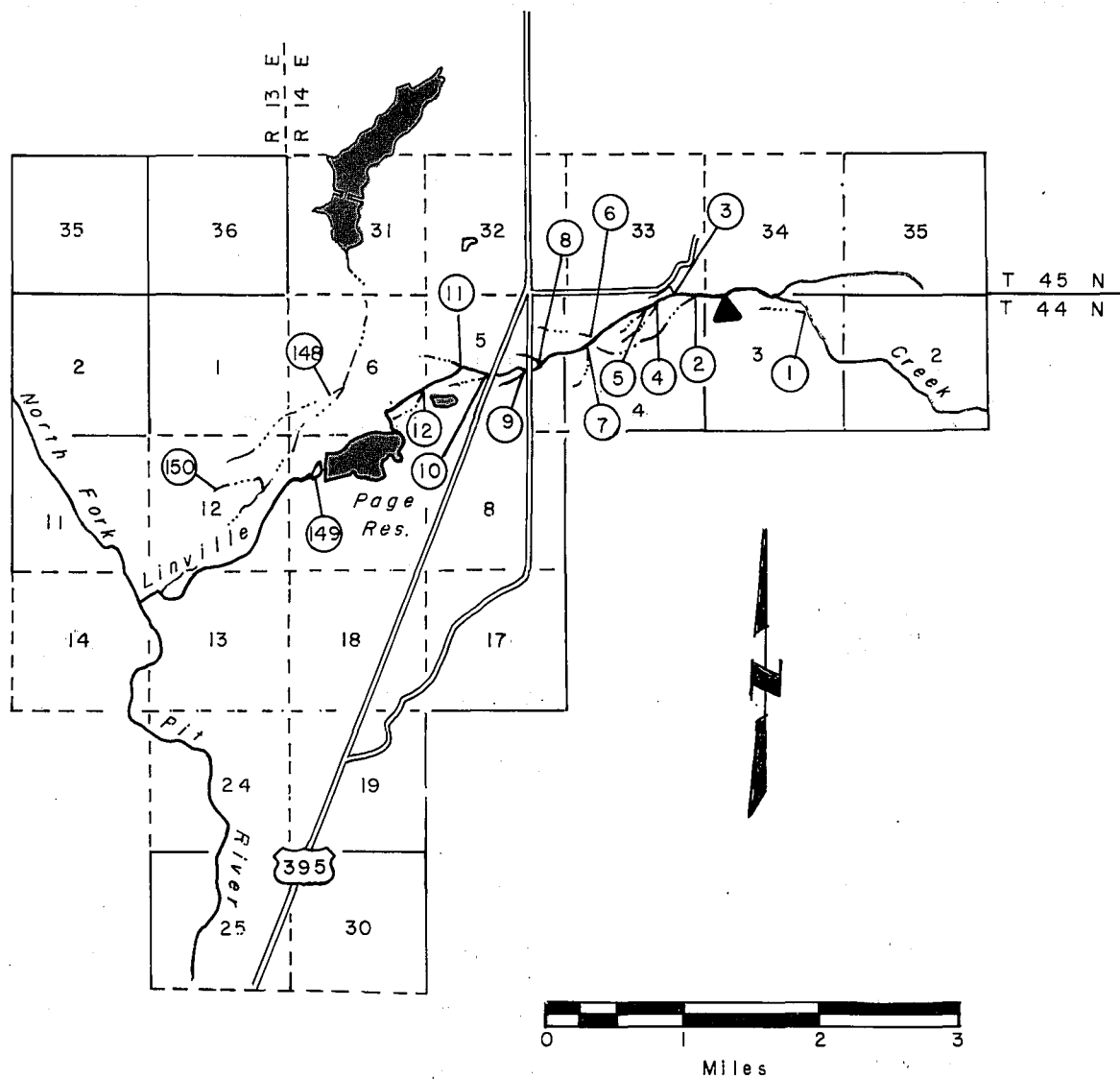


DIVERSION FROM DAVIS CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 37
DIVERSIONS FROM LINVILLE CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
2-5	Gardner	1.60
6-10	Gardner	2.20
1,11,12	Capik	1.35
12,148-150	Curtis	3.15

Figure 12c



▲ Watermaster — installed recorder station.

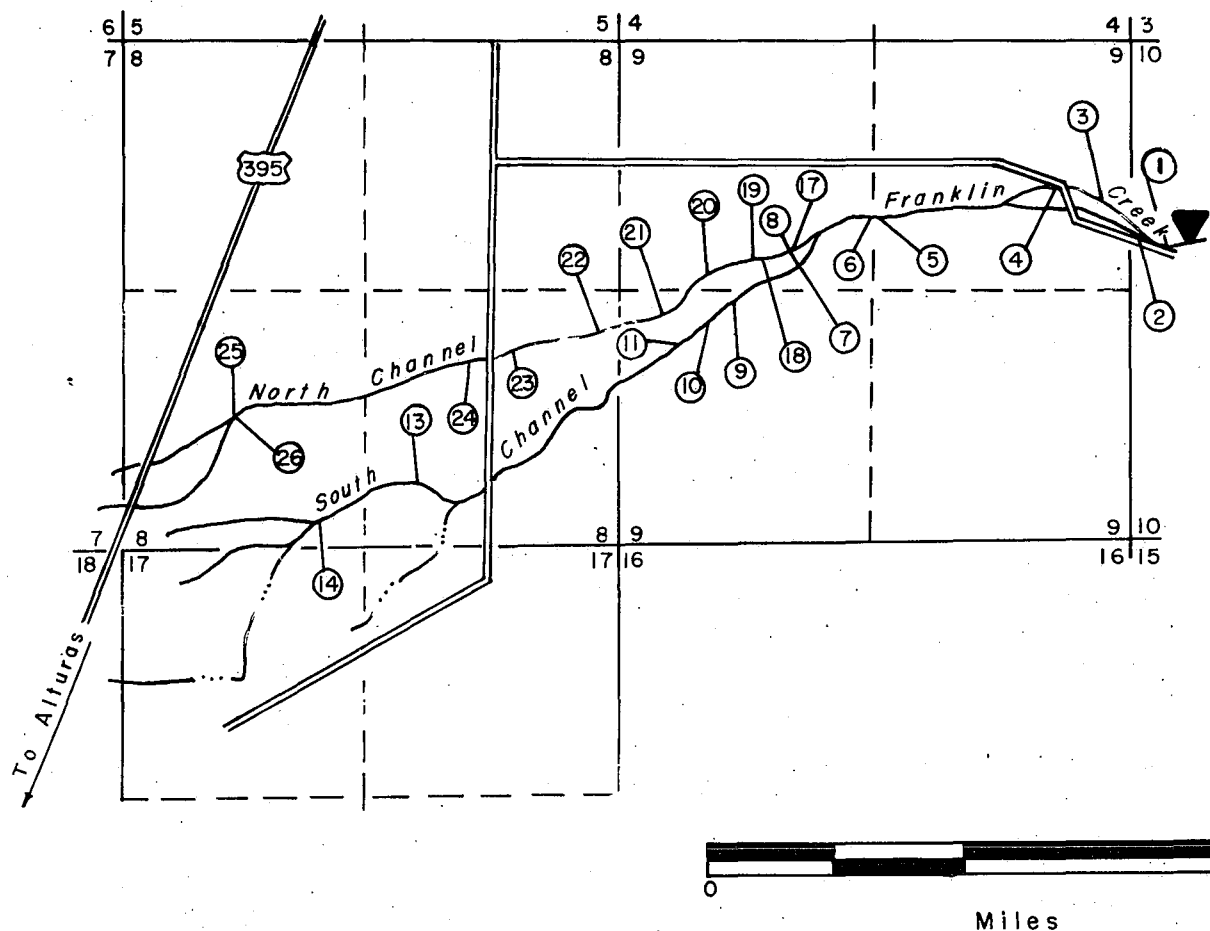
DIVERSIONS FROM LINVILLE CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 38
DIVERSIONS FROM FRANKLIN CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
2-4	Curtis	0.53
5,6	Curtis	0.46
7,8	Gardner	2.72
9-11	Curtis	0.40
17-22,25	Curtis	2.93
21	Milhous	2.31
10,13,14,26	Goulding	2.31

Figure 12d

T 44 N, R 14 E. M. D. B. & M.



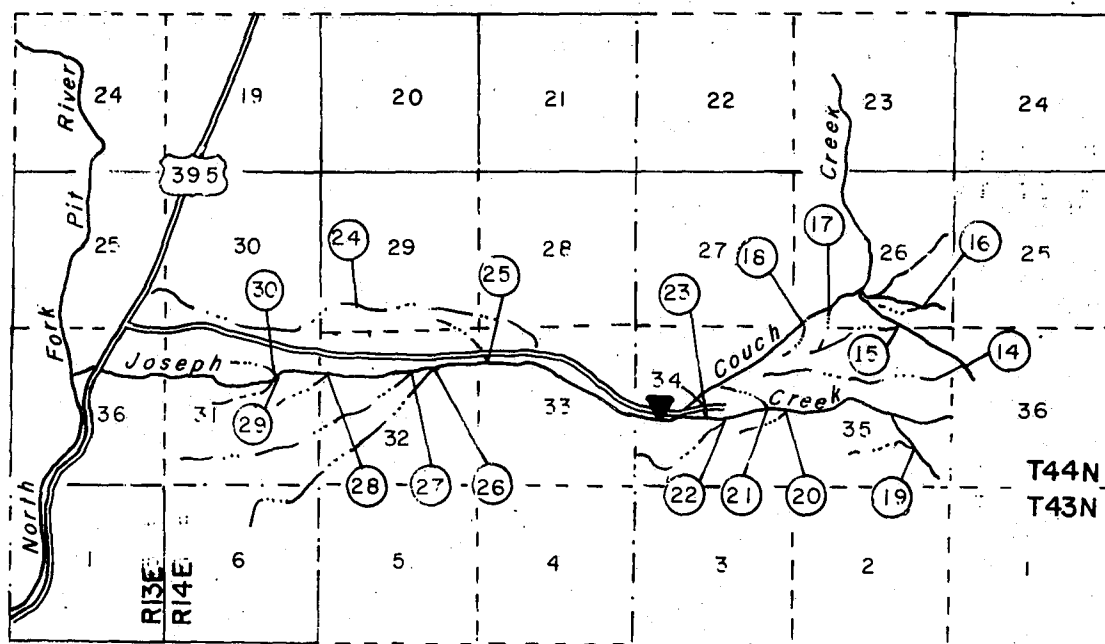
▲ Watermaster—installed recorder station

DIVERSIONS FROM FRANKLIN CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 39
DIVERSIONS FROM JOSEPH CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
14-18	U.S. Forest Service	1.15
19	McQueen	0.40
20-24	Cockrell, Inc.	1.38
22	Russell	0.40
24	Russell	0.50
24	Franks	0.10
26	U. S. Indian Service	1.30
24-30	Cockrell, Inc.	6.85

Figure 12e



▲ Watermaster-Installed recorder station



DIVERSIONS FROM JOSEPH CREEK,
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

TABLE 40

ALLOCATIONS FROM THOMS CREEK AND MILE CREEK

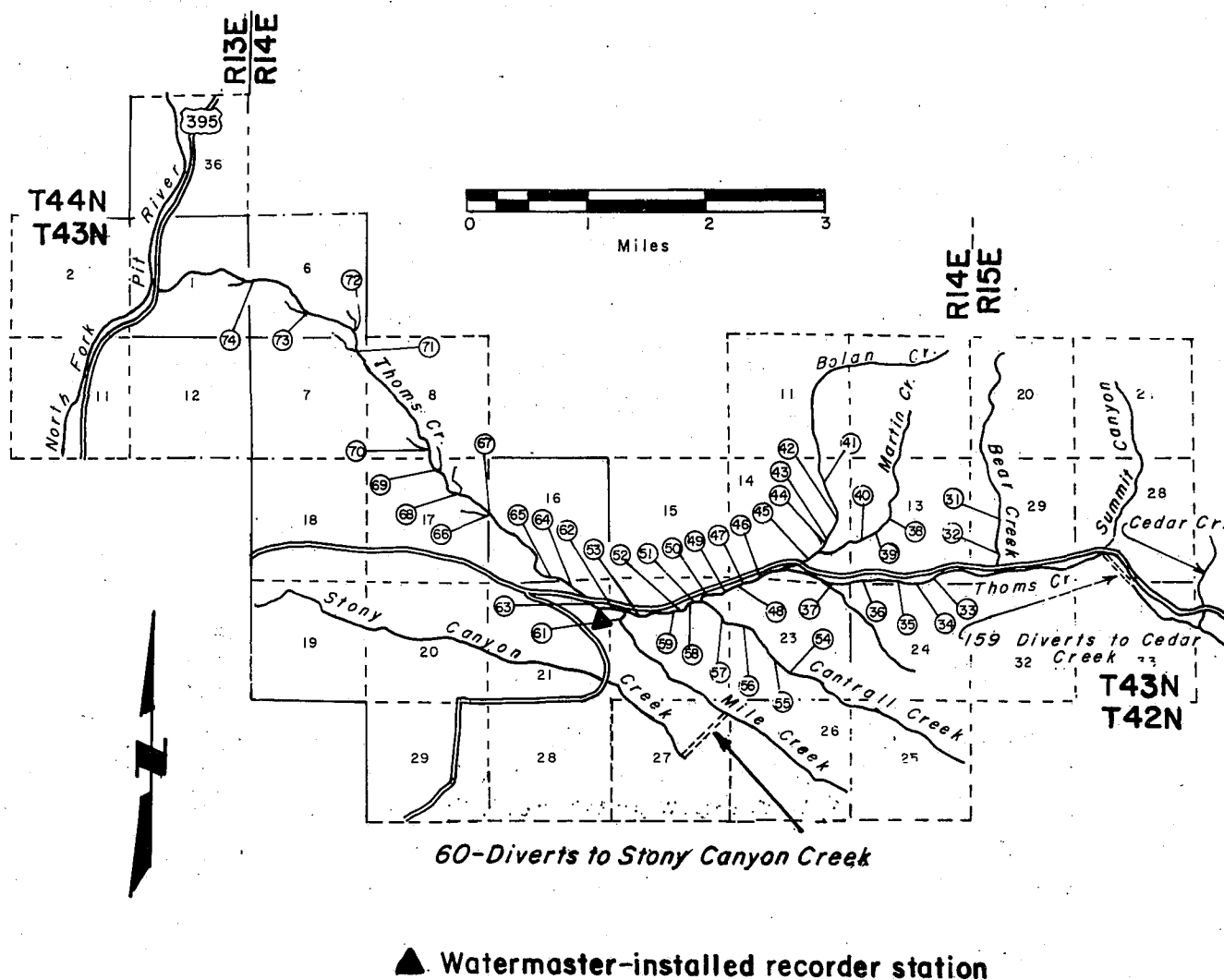
Thoms Creek

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
31, 31A, 31B,		
31B, 32	Marr	0.100
33, 34	Marr	0.051
35, 36	Neer	
35, 36	Armor	0.013
33, 34, 35	Neer	0.050
33, 34, 35	Putnam	0.025
33, 34, 35,		
38, 39, 40	Marr	0.541
37, 41-45	Dewitt	1.340
35, 36	Baker	0.010
54, 55, 56	Dunlap	0.050
54, 55, 56	Brock	0.100
54, 55, 56	Hogan	0.080
54, 55, 56	Erickson	0.060
54, 55, 56	Marr	0.010
54, 55, 56	Ceragioli	0.120
54	Coppedge	0.040
56A	Sigler	0.060
46, 47, 57, 61	Brown	1.250
62, 63	Hart	0.250
64, 65	State Wide Rent-A-Fence, Inc.	0.400
66-70	Beebe	1.140
	Spaulding	
71, 72, 73	Aldag, et al	0.650
74	Stanley	0.100

Mile Creek

60	Prock	0.800
60	Christopher	2.40
60	U. S. Indian Service	1.20

Figure 12f

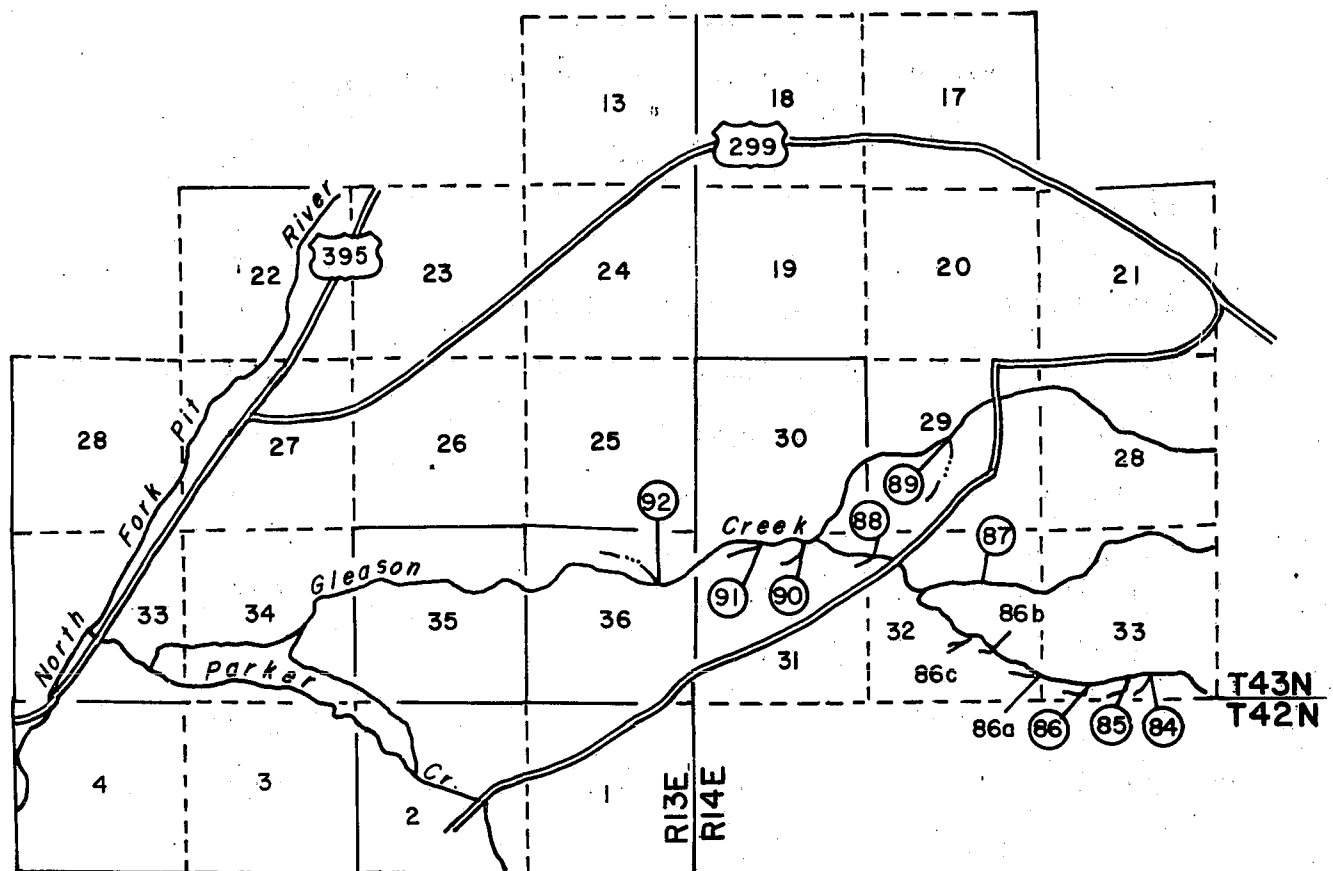


DIVERSIONS FROM THOMS CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 41
DIVERSIONS FROM GLEASON CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
84-86	Russell	1.00
86 a,b,c	Hamilton	0.20
87-91	Stains	2.00
82	U.S. Indian Service	1.35

Figure 12g



**DIVERSIONS FROM GLEASON CREEK,
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA**

TABLE 42

DIVERSIONS FROM PARKER CREEK AND SHIELDS CREEK

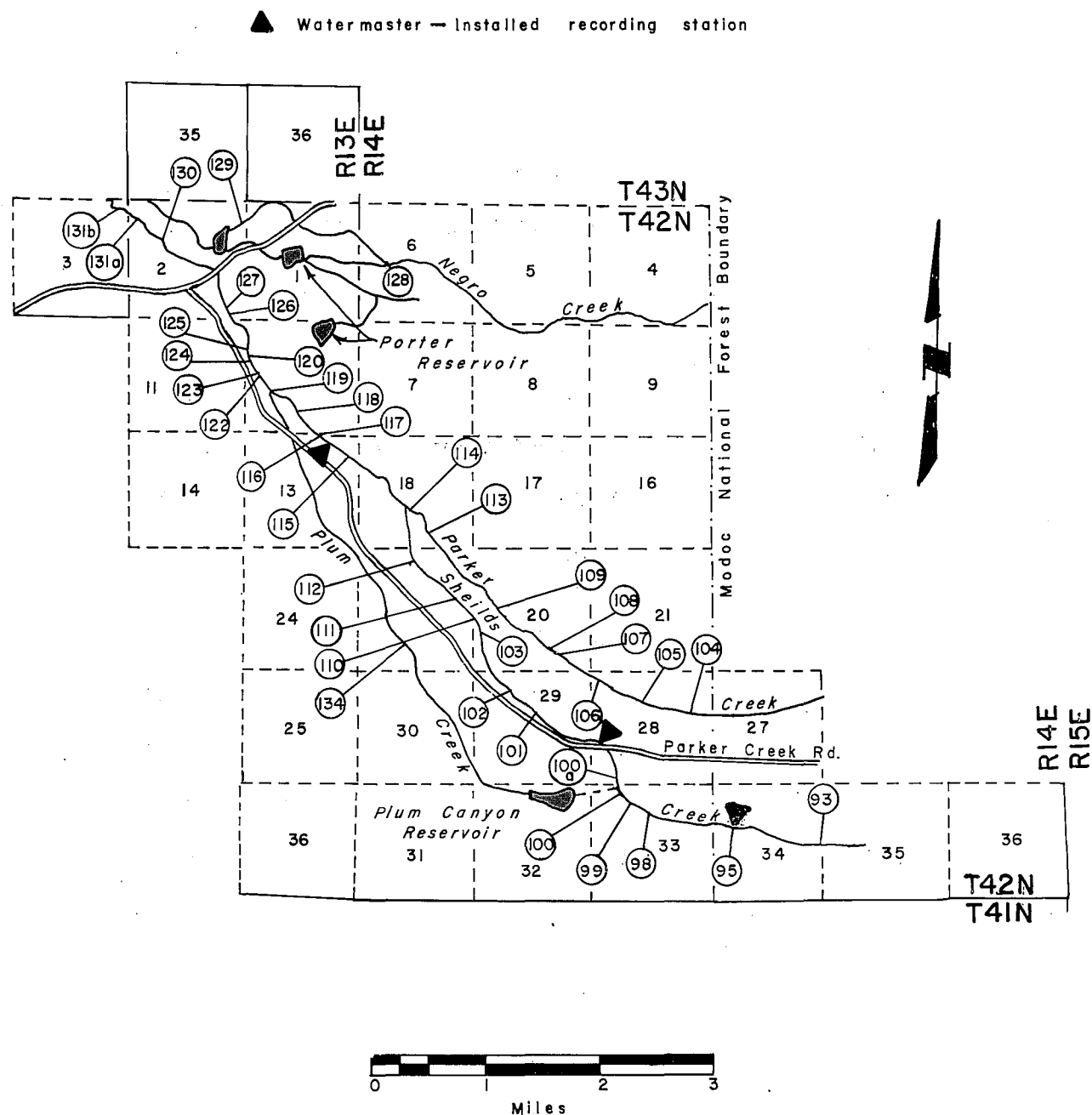
Parker Creek

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
104,105,106	Parker Creek Ranch	1.80
105,107-109	Weber	2.90
109	Imback	1.60
113,131	Volentine	5.58
116-118 120-124	Weber	2.08
123	Sorenson	0.10
123	Monroe	0.49
130-131a	U. S. Indian Service	2.97

Shields Creek

95,98,99	Weber	2.25
93,100,100a	Piper	0.70
101-103,110	Weber	1.90
100,111	Bailey	2.15
112	Imback	0.20
134	Porter	0.16
134	Weber	0.34

Figure 12h

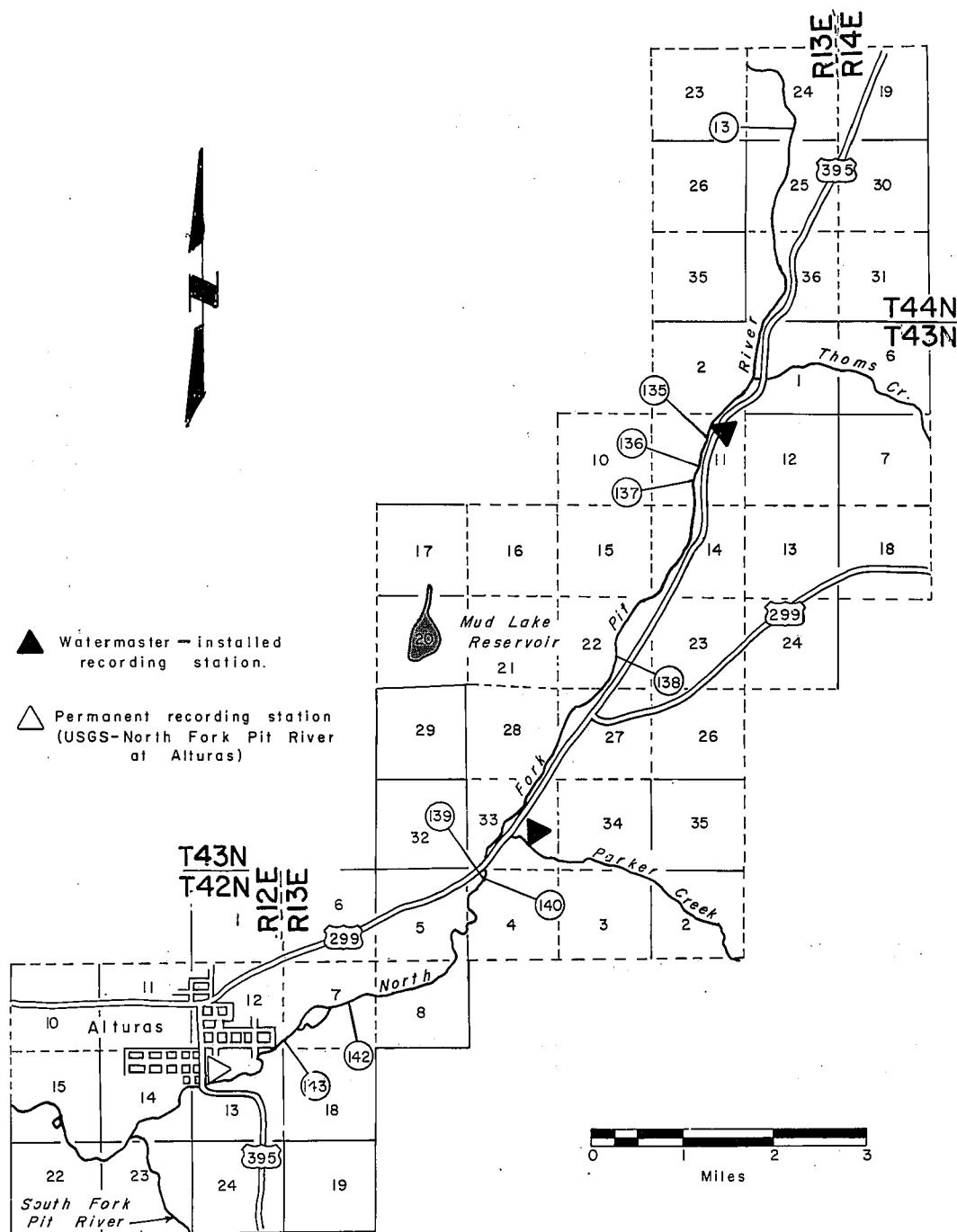


DIVERSIONS FROM
PARKER CREEK AND SHIELDS CREEK,
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

TABLE 43
DIVERSIONS FROM NORTH FORK PIT RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
13	Quinn	0.35
135-138	U.S. Indian Service	10.73
139 or 140	Fitch	4.84
139	Schluter	11.85
	Tranmal	2.62
141	Pahl	2.00
142	Schluter	4.00
	Baker	0.30
	Toles	0.32
	Moni	0.08
	Neer	0.16
143	Asher	1.44

Figure 12i



DIVERSIONS FROM NORTH FORK PIT RIVER, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

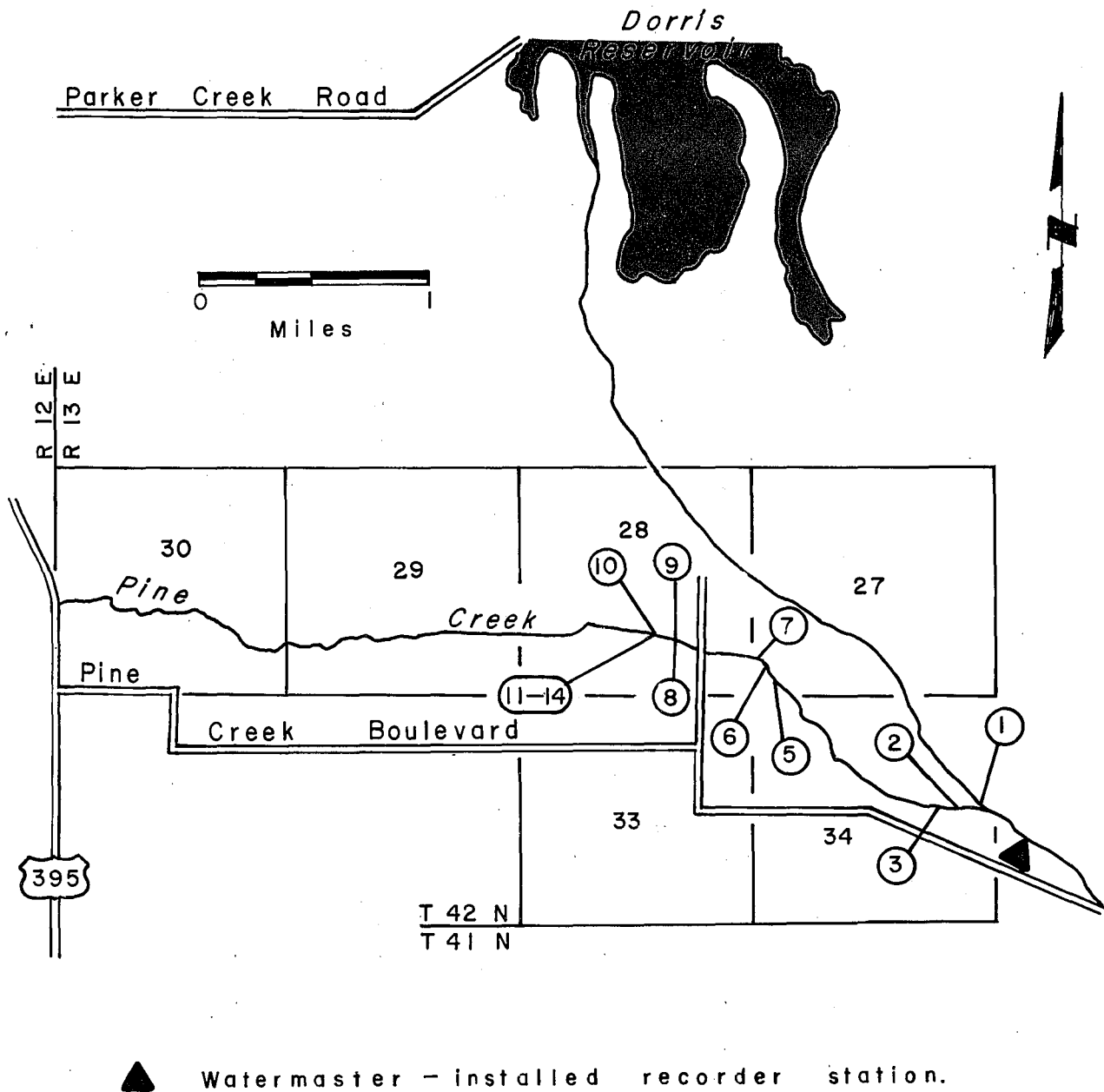
TABLE 44

DIVERSIONS FROM PINE CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Bagwell	0.30
	Porter	0.10
	Baker	0.13
	Struthers Family, Inc.	3.00
	Lemon	0.30
	Neer	0.43
	Baker	3.35
	Sullivan	0.14
	Wall	0.10
2,3,6,9	Rice	4.85
5	Baker	2.92
	Nelson	3.77
	Weber	4.41 ^{1/}
	Younger	3.42
10	Wildlife Refuge	31.30
11-14	Dunn	1.49

NOTE: Pine Creek channel capacity below No. 5 is about 20 cfs.
Surplus Pine Creek flow is diverted into Dorris Reservoir.

^{1/} Does not include half interest in Danhauser Reservoir,
1216 AF Total and upper pasture Reservoir, 250 AF Total.



DIVERSIONS FROM PINE CREEK,
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 45

1983 Daily Mean Discharge
(In cubic feet per second)

NEW PINE CREEK BELOW SCHROEDER'S

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		9.0	27	73	57	17	10	1
2		9.0	33	66	54	16	9.7	2
3		9.0	38	67	52	16	9.7	3
4		9.0	42	73	49	15	9.7	4
5		8.7	43	75	49	15	9.4	5
6		8.4	38	76	47	14	9.4	6
7		8.4	37	76	46	14	9.0	7
8		8.4	37	83	43	15	9.0	8
9		8.7	33	77	42	15	9.0	9
10		9.0	32	84	40	14	8.7	10
11		8.7	28	77	38	14	8.7	11
12		8.4	29	64	37	14	8.7	12
13		8.0	30	83	36	14	8.4	13
14		8.0	36	90	35	14	8.4	14
15		8.0	42	98	34	14	8.0	15
16		8.7	41	95	33	13	8.0	16
17		10	49	95	30	13	8.0	17
18		13	62	96	29	13	8.0	18
19		17	81	88	28	14	8.0	19
20		22	76	85	27	13	8.0	20
21		28	76	77	25	13	8.0	21
22		33	76	75	24	13	8.0	22
23		33	76	73	23	13	8.0	23
24		28	92	72	22	12	7.7	24
25		25	143	70	22	12	7.7	25
26		23	170	70	20	12	7.7	26
27		19	122	64	20	12	7.7	27
28		20	122	63	19	11	7.7	28
29		22	111	59	18	10	7.7	29
30		26	83	57	19	10	7.7	30
31			96		19	10		31
MEAN		15.2	64.5	76.7	33.5	13.4	8.5	MEAN
AC-FT		905	3970	4560	2060	823	503	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 46

1983 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK BELOW LARKIN GARDEN DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		7.3	14	NR	12	2.2	1.2	1
2		7.3	18	NR	11	2.1	1.0	2
3		7.3	24	NR	10	2.1	0.9	3
4		7.3	22	NR	10	2.1	0.9	4
5		7.3	20	NR	0.6	2.1	1	5
6		7.0	16	NR	9.2	2.2	0.8	6
7		7.0	15	NR	8.8	2.2	0.7	7
8		7.0	15	NR	8.3	2.1	0.7	8
9		7.0	13	NR	7.7	1.8	0.7	9
10		6.4	12	NR	7.1	1.5	0.6	10
11		5.8	11	NR	6.5	1.3	0.6	11
12		5.2	12	NR	6.0	1.1	0.6	12
13		4.3	13	NR	5.5	0.9	0.6	13
14		4.3	14	NR	5.0	1.0	0.5	14
15		4.6	17	20	4.6	0.9	0.5	15
16		6.4	16	19	4.2	0.8	0.5	16
17		8.5	18	19	3.8	0.7	0.5	17
18		10	23	18	3.5	0.6	0.5	18
19		12	26	18	3.2	1.5	0.5	19
20		13	34	18	3.0	1.4	0.5	20
21		14	NR	17	2.8	1.4	0.4	21
22		16	NR	17	2.8	1.9	0.4	22
23		14	NR	16	2.6	2.0	0.4	23
24		12	NR	16	2.6	1.9	0.4	24
25		9.7	NR	15	2.4	1.6	0.4	25
26		8.8	NR	15	2.4	1.5	0.3	26
27		9.1	NR	14	2.2	1.2	0.3	27
28		9.4	NR	14	2.2	1.1	0.3	28
29		9.7	NR	13	2.1	0.9	0.3	29
30		12	NR	13	2.1	0.8	0.3	30
31			NR		2.2	0.9		31
MEAN		8.7			5.3	1.5	0.6	MEAN
AC-FT		515			328	91	34	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 47

1983 Daily Mean Discharge
(In cubic feet per second)

DAVIS CREEK ABOVE DIVERSION NO. 4

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		18	40	NR	34	11	7.0	1
2		17	43	NR	33	11	6.4	2
3		16	40	NR	30	11	5.8	3
4		15	41	NR	28	11	5.8	4
5		12	41	NR	27	10	5.2	5
6		11	44	74	27	10	4.6	6
7		10	39	70	27	10	4.6	7
8		8.8	39	68	28	10	5.2	8
9		11	36	67	27	10	5.2	9
10		13	35	74	26	9.4	5.2	10
11		12	32	66	24	9.4	4.6	11
12		12	30	65	23	8.8	4.0	12
13		11	30	66	23	9.4	4.0	13
14		12	32	68	23	9.4	4.0	14
15		14	34	68	23	8.8	4.0	15
16		14	35	67	22	8.2	3.4	16
17		14	36	68	21	7.6	3.8	17
18		15	39	65	21	8.2	3.8	18
19		18	44	60	20	12	3.8	19
20		21	50	57	19	10	3.8	20
21		24	54	54	18	11	3.8	21
22		26	NR	50	18	11	3.8	22
23		26	NR	48	17	9.4	3.8	23
24		26	NR	46	17	8.8	3.6	24
25		27	NR	44	17	8.2	3.6	25
26		28	NR	42	16	7.6	3.6	26
27		26	NR	41	15	7.0	3.6	27
28		24	NR	39	15	7.0	3.6	28
29		24	NR	33	13	7	3.6	29
30		29	NR	32	12	7	3.6	30
31			NR		12	7.0		31
MEAN		17.8			21.5	9.2	4.4	MEAN
AC-FT		1060			1320	568	259	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 48

1983 Daily Mean Discharge
(In cubic feet per second)

LINVILLE CREEK AT OLD POWERHOUSE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		3.2	3.4	5.5	3.4	2.8	2.8	1
2		3.2	3.4	5.4	3.4	2.8	2.8	2
3		3.2	3.4	5.4	3.4	2.8	2.8	3
4		3.2	3.4	5.2	3.3	2.8	2.8	4
5		3.2	3.4	5.2	3.3	2.8	2.8	5
6		3.2	3.4	5.1	3.3	2.8	2.8	6
7		3.1	3.4	4.9	3.3	2.8	2.8	7
8		3.1	3.5	4.9	3.1	2.8	2.8	8
9		3.1	3.5	4.8	3.1	2.8	2.8	9
10		3.1	3.5	4.6	3.1	2.8	2.8	10
11		3.1	3.5	4.6	3.1	2.8	2.8	11
12		3.1	3.5	4.5	3.1	2.8	2.8	12
13		3.1	3.5	4.4	3.1	2.8	2.8	13
14		3.0	3.5	4.4	3.1	2.8	2.6	14
15		3.0	3.5	4.2	3.1	2.8	2.6	15
16		3.0	3.5	4.2	3.1	2.8	2.6	16
17		3.0	3.5	4.2	3.1	2.8	2.6	17
18		3.0	3.6	4.1	3.1	2.8	2.8	18
19		3.0	3.9	4.1	3.0	2.8	2.6	19
20		3.1	4.1	4.1	3.0	2.8	2.6	20
21		3.1	4.4	3.9	3.0	2.8	2.6	21
22		3.1	4.6	3.9	3.0	2.8	2.6	22
23		3.3	4.8	3.8	3.0	2.8	2.6	23
24		3.3	5.1	3.6	3.0	2.8	2.6	24
25		3.3	5.2	3.6	3.0	2.8	2.6	25
26		3.4	5.4	3.6	2.9	2.8	2.6	26
27		3.4	5.8	3.5	2.9	2.8	2.6	27
28		3.4	6.2	3.5	2.9	2.8	2.6	28
29		3.4	6.2	3.5	2.9	2.8	2.6	29
30		3.4	5.8	3.4	2.9	2.8	2.6	30
31			5.7		2.9	2.8		31
MEAN		3.2	4.2	4.3	3.1	2.8	2.7	MEAN
AC-FT		189	257	258	190	172	160	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 49

1983 Daily Mean Discharge
(In cubic feet per second)

FRANKLIN CREEK ABOVE DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		7.6	7.1	26	5.8	3.1	3.1	1
2		7.4	7.1	22	5.6	3.1	3.1	2
3		7.1	8.4	22	5.3	3.1	3.1	3
4		6.8	9.3	21	4.8	3.1	3.1	4
5		6.6	9.0	20	4.6	3.1	3.1	5
6		6.3	8.7	21	4.6	3.1	3.1	6
7		6.1	8.4	20	4.6	3.1	3.1	7
8		5.8	8.7	20	4.6	3.1	3.0	8
9		5.6	8.2	20	4.4	3.1	3.0	9
10		5.3	7.8	17	4.4	3.1	3.0	10
11		5.3	7.4	17	4.1	3.1	2.8	11
12		5.1	8.2	15	4.1	3.1	2.8	12
13		5.1	9.3	13	4.0	3.1	2.8	13
14		4.8	9.9	12	3.7	3.1	2.7	14
15		4.6	11	11	3.7	3.1	2.7	15
16		4.8	12	10	3.7	3.1	2.7	16
17		5.3	13	9.9	3.7	3.1	2.7	17
18		6.1	14	9.3	3.7	3.1	2.8	18
19		6.6	15	8.4	3.7	4.0	2.8	19
20		6.8	15	7.8	3.7	3.5	2.9	20
21		7.8	15	7.6	3.5	3.5	2.9	21
22		7.8	17	7.4	3.5	3.5	2.9	22
23		7.6	19	7.1	3.5	3.5	2.9	23
24		7.4	19	6.8	3.5	3.5	3.0	24
25		7.1	21	6.6	3.5	3.3	3.3	25
26		6.8	21	6.3	3.5	3.1	3.1	26
27		6.6	22	6.1	3.5	3.1	3.1	27
28		6.6	20	5.8	3.5	3.1	3.1	28
29		6.8	25	5.8	3.1	3.1	3.1	29
30		7.1	27	5.6	3.3	3.1	3.1	30
31			28		3.1	3.1		31
MEAN		6.4	13.9	12.9	4.0	3.2	3.0	MEAN
AC-FT		378	856	769	247	198	176	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 50

1983 Daily Mean Discharge
(In cubic feet per second)

JOSEPH CREEK BELOW COUCH CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		22	22	70	13	2.8	1.1	1
2		21	31	57	12	2.4	1.1	2
3		20	35	55	10	2.4	1.1	3
4		17	38	48	10	2.1	1.0	4
5		14	36	44	9.4	2.0	1.0	5
6		14	40	41	8.5	1.8	1.0	6
7		14	37	41	8.3	2.1	1.0	7
8		14	37	41	7.7	2.0	1.0	8
9		16	31	40	7.3	1.8	1.0	9
10		16	27	43	7.1	2.0	1.0	10
11		14	25	41	6.6	1.8	1.0	11
12		14	25	36	6.2	1.6	1.0	12
13		13	27	33	5.8	1.8	1.0	13
14		12	30	29	5.6	1.7	0.9	14
15		12	30	27	5.6	1.4	0.9	15
16		14	29	27	5.4	1.4	0.8	16
17		18	31	26	5.2	1.4	0.9	17
18		22	36	25	5.1	1.6	0.9	18
19		29	40	22	4.9	3.2	0.8	19
20		29	47	20	4.6	2.4	0.8	20
21		36	53	19	4.5	3.0	0.8	21
22		32	57	18	4.3	2.5	0.8	22
23		29	62	18	3.9	2.1	0.8	23
24		25	75	17	3.8	2.1	0.8	24
25		22	75	15	3.7	1.7	0.8	25
26		19	75	15	3.9	1.4	0.9	26
27		18	78	14	3.7	1.1	0.9	27
28		22	80	13	3.7	1.1	0.9	28
29		23	82	12	3.2	1.1	0.9	29
30		23	78	12	2.8	1.1	0.9	30
31			72		2.8	1.1		31
MEAN		19.8	46.5	30.6	6.1	1.9	0.9	MEAN
AC-FT		1180	2860	1820	374	115	55	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 51

1983 Daily Mean Discharge
(In cubic feet per second)

NORTH FORK PIT RIVER ABOVE PARKER CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		84	480	121	26	5.5	3.3	1
2		80	327	103	44	4.1	3.0	2
3		77	164	95	32	3.8	2.9	3
4		75	150	91	23	3.6	2.6	4
5		70	159	86	20	3.3	2.5	5
6		66	221	79	19	2.9	2.2	6
7		63	143	79	19	2.9	2.0	7
8		63	131	82	19	2.9	1.8	8
9		65	123	86	19	2.5	1.7	9
10		66	113	86	20	2.1	1.5	10
11		65	105	91	20	1.5	1.5	11
12		61	93	82	17	0.8	1.7	12
13		61	91	77	15	0.7	1.8	13
14		58	93	68	14	1.0	2.0	14
15		58	97	63	13	0.8	2.1	15
16		57	91	68	13	1.2	2.2	16
17		61	91	72	11	1.4	2.2	17
18		65	89	58	11	1.4	2.1	18
19		75	95	51	10	6.9	2.0	19
20		79	103	51	10	15	1.8	20
21		91	109	51	10	8.9	1.8	21
22		89	115	46	9	20	1.8	22
23		82	119	41	8.3	3.6	1.8	23
24		77	125	40	6.2	3.6	1.7	24
25		84	127	36	5.0	3.8	1.7	25
26		113	125	32	5.0	3.6	1.7	26
27		99	125	36	5.5	2.7	1.7	27
28		80	129	26	5.8	2.7	1.7	28
29		73	145	25	5.8	2.9	1.7	29
30		89	133	22	5.8	3.3	1.7	30
31			131		6.0	3.3		31
MEAN		74.2	140	64.8	14.4	4.0	2.0	MEAN
AC-FT		4420	8610	3860	888	243	119	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 52

1983 Daily Mean Discharge
(In cubic feet per second)

THOMS CREEK AT CEDARVILLE-ALTURAS HIGHWAY

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		34	30	58	6.8	1.9	1.5	1
2		33	34	52	6.7	1.8	1.5	2
3		32	37	47	6.5	1.7	1.5	3
4		31	39	42	6.4	1.6	1.3	4
5		31	38	39	6.3	1.5	1.3	5
6		30	37	34	6.2	1.5	1.1	6
7		29	36	29	6.1	1.5	1.1	7
8		28	36	26	6.0	1.5	1.0	8
9		27	36	22	5.8	1.5	1.0	9
10		26	35	21	5.5	1.5	0.9	10
11		25	35	20	5.3	1.5	0.9	11
12		24	35	19	5.1	1.5	0.8	12
13		23	35	18	4.9	1.5	0.8	13
14		25	36	18	4.7	1.5	0.7	14
15		26	38	17	4.5	1.5	0.6	15
16		27	39	17	4.3	1.5	0.6	16
17		28	39	16	4.1	1.5	0.6	17
18		30	42	15	3.9	1.5	0.6	18
19		22	42	14	3.7	3.2	0.6	19
20		33	50	13	3.5	2.5	0.7	20
21		34	57	12	3.3	3.0	0.7	21
22		35	64	11	3.0	2.0	0.7	22
23		34	72	10	2.9	1.5	0.8	23
24		32	71	9.3	2.8	1.5	0.8	24
25		30	70	8.7	2.6	1.5	1.0	25
26		29	69	8.0	2.5	1.5	1.5	26
27		27	68	7.7	2.4	1.5	2.0	27
28		27	77	7.3	2.3	1.4	1.0	28
29		27	75	7.0	2.2	1.4	1.0	29
30		29	69	6.9	2.0	1.3	1.0	30
31			63		2.0	1.3		31
MEAN		22.9	48.5	20.8	4.3	1.7	1.0	MEAN
AC-FT		1720	2980	1240	266	102	59	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 53

1983 Daily Mean Discharge
(In cubic feet per second)

PARKER CREEK AT FOGARTY RANCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		64	118	130	26	3.6	2.4	1
2		63	114	113	26	4.2	2.4	2
3		62	120	106	24	4.2	2.2	3
4		61	120	100	24	4.2	2.0	4
5		59	116	88	23	4.2	2.0	5
6		52	126	80	22	4.4	2.0	6
7		52	107	75	22	4.0	2.2	7
8		55	102	71	20	4.4	3.0	8
9		60	94	67	20	4.4	3.0	9
10		60	79	75	20	3.0	3.0	10
11		59	76	76	18	2.8	3.0	11
12		52	78	59	18	2.6	3.2	12
13		48	83	53	17	4.4	3.2	13
14		46	90	50	16	4.0	3.2	14
15		46	106	47	16	3.8	3.2	15
16		49	98	46	15	3.6	3.2	16
17		55	110	45	15	3.6	3.2	17
18		68	123	44	14	3.6	3.2	18
19		79	154	43	14	4.0	2.6	19
20		88	172	41	13	5.6	2.6	20
21		100	184	40	12	5.1	3.0	21
22		103	176	39	11	7.9	3.0	22
23		90	176	37	11	4.2	3.2	23
24		82	172	36	10	4.0	3.2	24
25		75	167	34	10	4.0	3.2	25
26		70	167	33	11	4.0	4.0	26
27		63	166	31	6.2	3.8	5.0	27
28		61	169	30	2.8	3.8	3.6	28
29		64	166	29	4.2	3.6	3.4	29
30		76	154	27	4.6	3.4	3.4	30
31			142		3.6	2.4		31
MEAN		65.4	130	58.2	15.1	4.0	3.0	MEAN
AC-FT		3890	7980	3460	931	248	178	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 54

1983 Daily Mean Discharge
(In cubic feet per second)

PARKER CREEK NEAR MOUTH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		93	NR	NR	44	3.1	2.4	1
2		88	NR	NR	39	2.7	2.3	2
3		84	NR	NR	41	2.3	2.3	3
4		80	NR	180	41	2.0	2.2	4
5		70	NR	159	44	1.5	2.2	5
6		62	NR	139	43	1.5	2.1	6
7		60	NR	124	37	1.4	2.0	7
8		63	NR	124	34	1.4	2.0	8
9		68	NR	126	32	1.3	2.0	9
10		69	NR	122	28	1.3	2.0	10
11		69	153	151	25	1.3	2.0	11
12		64	129	120	22	1.2	2.0	12
13		54	132	94	20	1.2	2.0	13
14		51	144	80	18	1.2	2.0	14
15		48	NR	70	16	1.1	2.0	15
16		48	NR	63	15	1.1	1.8	16
17		57	NR	62	14	1.0	1.8	17
18		70	NR	52	13	1.0	1.6	18
19		96	NR	49	12	7.0	1.6	19
20		107	NR	42	11	15	1.5	20
21		120	NR	38	9.8	9.0	1.5	21
22		148	NR	39	8.8	20	1.5	22
23		141	NR	41	8.4	4.0	1.5	23
24		128	NR	40	7.8	3.8	1.5	24
25		116	NR	41	7.0	3.5	1.5	25
26		102	NR	44	6.4	3.3	2.0	26
27		100	NR	44	5.6	3.1	3.0	27
28		100	NR	43	5.0	3.0	3.0	28
29		83	NR	47	4.2	2.9	3.0	29
30		95	NR	47	3.7	2.7	3.0	30
31			NR		3.4	2.5		31
MEAN		84.5			20	3.5	2.0	MEAN
AC-FT		5030			1230	213	122	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 55

1983 Daily Mean Discharge
(In cubic feet per second)

SHIELDS CREEK ABOVE DIVERSION NO. 95

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1			20	19	12	6.0	4.7	1
2			19	18	12	5.8	4.7	2
3			18	18	12	5.8	4.7	3
4			17	17	12	5.8	4.7	4
5			16	16	11	5.8	4.5	5
6			16	16	11	5.8	4.2	6
7			15	16	11	5.8	4.2	7
8			15	16	11	5.8	4.0	8
9			14	15	11	6.0	4.0	9
10			14	16	10	5.8	3.8	10
11			15	16	10	5.8	3.8	11
12			16	15	10	5.6	3.8	12
13			17	14	10	5.6	3.6	13
14			17	14	10	5.8	3.6	14
15			18	14	9.6	5.6	3.6	15
16			18	14	9.4	5.4	3.6	16
17			18	14	9.4	5.4	3.6	17
18			18	13	9.0	5.4	3.4	18
19			18	13	9	7.0	3.4	19
20			18	13	8.8	6.0	3.4	20
21			19	13	8.5	5.8	3.4	21
22			19	12	8.3	5.6	3.4	22
23			19	12	8.1	5.4	3.1	23
24			20	12	7.8	5.4	3.1	24
25			20	12	7.2	5.4	3.1	25
26			20	12	6.5	5.2	3.1	26
27			20	12	6.5	4.9	2.9	27
28			19	12	6.3	4.7	2.9	28
29			20	12	6.0	4.7	2.9	29
30			19	12	6.0	4.7	2.9	30
31			19		6.0	4.7		31
MEAN			17.8	14.3	9.2	5.6	3.7	MEAN
AC-FT			1090	849	566	342	218	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 56

1983 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR ALTURAS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	13	26	128	205	61	30	21	1
2	14	22	60	164	61	29	21	2
3	16	21	33	148	59	29	21	3
4	22	20	33	136	59	28	20	4
5	18	18	38	132	58	27	20	5
6	16	17	50	131	56	27	20	6
7	14	17	40	129	53	27	20	7
8	13	17	34	131	52	27	20	8
9	13	17	33	135	51	27	20	9
10	14	18	32	152	49	26	20	10
11	45	17	30	160	47	25	20	11
12	35	17	29	135	45	25	20	12
13	49	16	29	117	44	25	20	13
14	31	16	30	102	42	25	20	14
15	24	16	32	95	42	25	19	15
16	20	16	32	91	42	24	19	16
17	19	17	35	91	42	24	19	17
18	17	17	39	90	40	24	19	18
19	16	19	43	89	40	28	19	19
20	16	21	49	86	39	26	18	20
21	16	24	54	78	37	26	18	21
22	16	24	58	71	36	25	19	22
23	17	24	62	67	33	24	19	23
24	17	24	67	65	32	23	19	24
25	16	24	75	66	33	22	18	25
26	18	28	90	67	33	22	18	26
27	19	27	113	66	33	22	19	27
28	21	24	144	63	32	22	18	28
29	21	24	194	62	32	21	17	29
30	29	31	227	60	31	21	17	30
31	66		228		30	21		31
MEAN	22	20.6	69.1	106.1	43.4	25.1	19.3	MEAN
AC-FT	1350	1230	4250	6320	2670	1540	1150	AC-FT

SCOTT RIVER WATERMASTER SERVICE AREA

The Scott River service area is in western Siskiyou County and consists of four tributaries of the Scott River: French Creek, Shackleford Creek, Sniktaw Creek, and Wildcat Creek. Before 1980, French Creek and Shackleford Creek were separate service areas. Wildcat Creek came into service in 1981, and the four tributaries to the Scott River were combined to form the Scott River watermaster service area.

1983 Distribution

Watermaster service began in the Scott River service area on April 1 with Lester Lighthall, Water Resources Technician II, as watermaster. Kenneth E. Morgan, Water Resources Engineering Associate, also served as watermaster from July 20 to September 30.

The available water supply for Scott River tributaries was one of the best on record.

French Creek

The French Creek service area is in Scott Valley, western Siskiyou County, near the town of Etna. The major sources of water supply are French, Miners, and North Fork French Creeks. French Creek flows northeast through the center of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about three miles above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek one mile upstream from the confluence with Miners Creek.

The service area encompasses the entire agricultural area within the French Creek Basin and some additional lands along the west side of the Scott River near the town of Etna. It is about 0.5 mile wide and 5 miles long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 3,200 feet at the south to about 2,800 feet at the confluence of French Creek and Scott River.

A map of the French Creek stream system with the diversions and roads is presented as Figure 13a, page 129.

Basis of Service

The rights of this creek system were determined by court reference and set forth in Decree No. 14478, Siskiyou County Superior Court, dated July 1, 1958.

Water is distributed according to three schedules: North Fork French Creek, with three priorities; Miners Creek with three; and the French Creek, Horse Range Creek, Paynes Lake Creek, and Duck Lake system, with seven.

These schedules are independent of each other with two exceptions: (1) Miners Creek users have the option of diverting from French Creek when water is not available from Miners Creek, and (2) maximum allowable flows are specified at given points, regardless of the source of the water.

One peculiarity of this decree is that it included two water rights that have a specified amount but are subject to the exclusive control of the other owners of the ditch.

The French Creek watermaster service area was created on November 19, 1968, and service was started on July 1, 1969.

Water Supply

The water supply comes from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

The watershed of French Creek contains about 32 square miles of heavily forested, steep mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 7,200 feet along its west rim to about 3,200 feet at the foot of the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of French Creek, is presented in Table 58, page 131.

French Creek 1983 Distribution

The season started on French Creek with all 7 priorities being filled and continued the same until the end of the watermaster season on September 30. There was sufficient water to fill all water rights on miners creek during the 1983 season.

Shackleford Creek

The Shackleford Creek service area is in western Siskiyou County near the town of Fort Jones in Scott Valley. The major sources of water for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about 2 miles wide by 6 miles long, with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River. A map of the Shackleford Creek stream system is presented as Figure 13b, page 133.

Basis of Service

The Shackleford Creek watermaster service area was created on November 6, 1950. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 13775, Siskiyou County Superior Court, dated April 3, 1950.

The allotments are defined in four separate schedules. The upper Shackleford Creek group and lower Shackleford Creek group each have seven priority classes, and the upper Mill Creek group and lower Mill Creek group each have three priority classes.

Along with these schedules of allotments during the irrigation season, the decree defines two storage rights upstream of all other diversions. This stored water is released late in the irrigation season and commingled with the natural flow of Shackleford Creek for use by owners.

Water Supply

The water supply for Shackleford Creek comes from snowmelt runoff, springs and seepage, and supplemental stored water released from Cliff and Campbell Lakes, near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep mountainous terrain of the northeasterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow for second priority allotments in the Shackleford Ditch.

Method of Distribution

Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about 6 miles and a capacity of about 12 cfs.

Shackleford Creek 1983 Distribution

There was sufficient water to fill all priorities until the first week of August. Water was available to supply a portion of sixth priority needs until the end of the watermaster season on September 30.

No water was released from Campbell Lake in 1983 due to the Shackleford Ditch, Diversion No. 4, being in need of repair.

The years 1982 and 1983 were similar in water supply. Both seasons had abundant water, and 1983 was the best of the two.

Sniktaw Creek

The Sniktaw Creek service area is in western Siskiyou County, seven miles west of the town of Fort Jones in Scott Valley. It encompasses an agricultural area about three miles long and one mile wide, running from south to north. Elevations in the Sniktaw watershed range from 6,700 feet in the southwest to about 2,650 feet at the confluence of Sniktaw Creek and Scott River.

A map of the Sniktaw Creek stream system is presented as Figure 13c on page 135.

Basis of Service

The Sniktaw Creek service area was added to the Scott River watermaster service area on April 1, 1981. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980.

The allotments are defined in the Scott River Decree, Schedule B 38, which has three priority allotments.

Water Supply

The water supply for Sniktaw Creek comes from snowmelt, springs and seepage. Water from Shackleford Creek (Diversions 3, 17, 19, 20, and 21) supplements available water in Sniktaw Creek.

Return water from Heide's Shackleford Creek Ditch, Diversion 3, commingles with natural flow of Sniktaw Creek. After leaving the Heide property and entering Sniktaw Creek, it is allotted as set forth in Schedule B38 (Sniktaw Creek) from Diversions 665 to 679.

Heide may use tailwater from Shackleford Creek Ditch, Diversion 3, for irrigation of 27 acres under License 10875 issued on Application 22882 for use on former Indian lands. The right may be exercised only at times that Heide is receiving water from Shackleford Creek Ditch, Diversion 3, or at times that all Sniktaw Creek allotments are being filled.

Sniktaw Creek 1983 Distribution

This is the third year of watermaster service on Sniktaw Creek. All of Sniktaw Creek priorities were filled until mid-August, after which a portion of third priority was filled until the end of the watermaster season on September 30. Shackleford Creek, Diversion No. 3, diverted water into Sniktaw Creek for all of 1983 season. This year and 1982 were excellent years for water supply.

Wildcat Creek

The Wildcat Creek service area is in western Siskiyou County near the town of Callahan. The major sources of water are Wildcat Creek, which flows through the service area, foreign water imported from Jackson Creek, Grizzly Creek and Camp Gulch. A map of Wildcat Creek stream system is presented as Figure 13d on page 137.

Basis of Service

The Wildcat Creek watermaster area was started May 1, 1980. Water is distributed under a statutory adjudication that resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980. The allotments are defined in the Scott River Decree, Schedule B 10.

Method of Distribution

Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

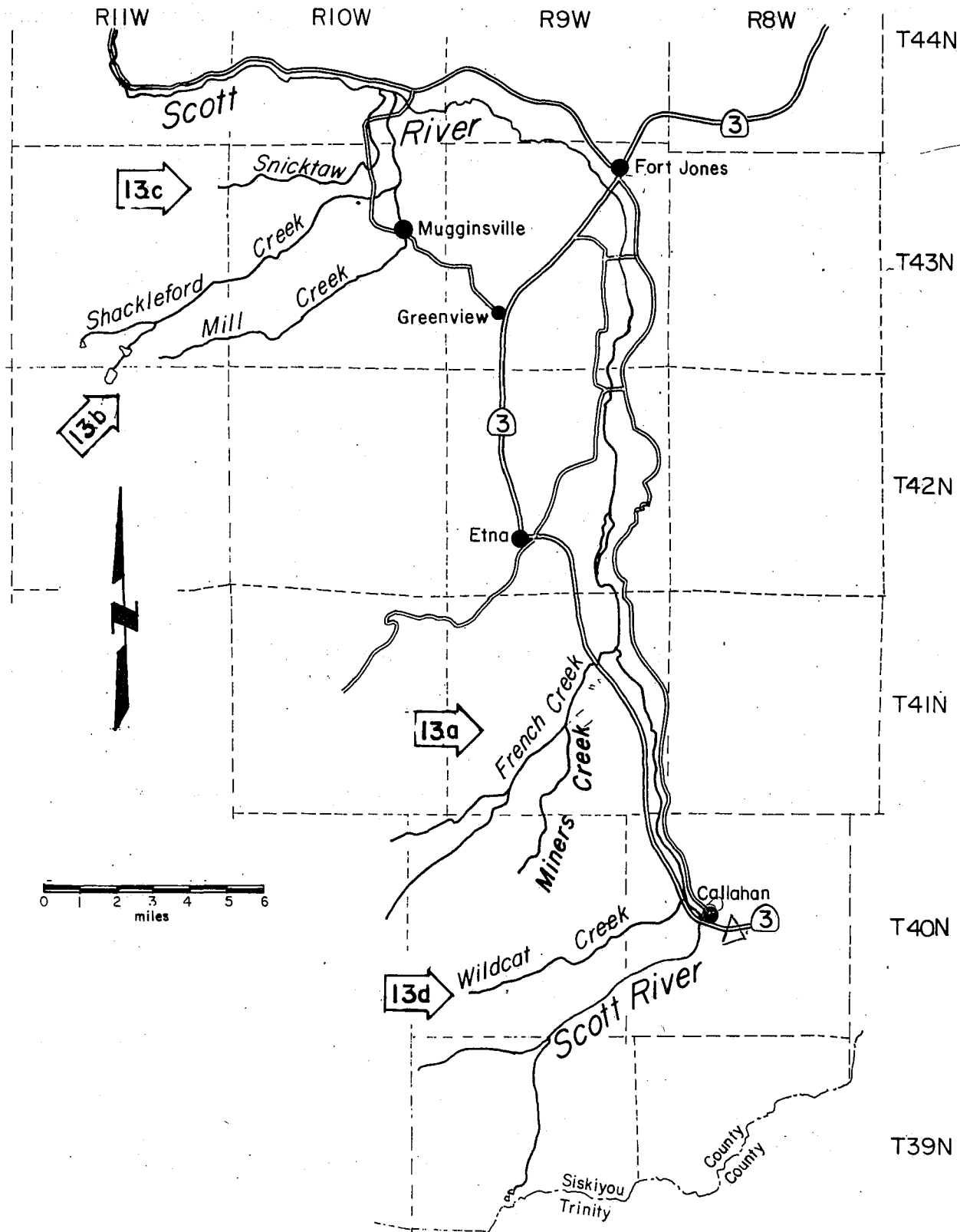
Wildcat Creek 1983 Distribution

The water supply was much above normal.

Import water from Sugar Creek and Jackson Creek assured an excellent water supply for the Kerrigan ranch. Wildcat Creek and Kerrigan ranch runoff provided the Struckman ranch an ample water supply.

Recorders were installed on partial flumes at diversion points A and B.

Figure 13

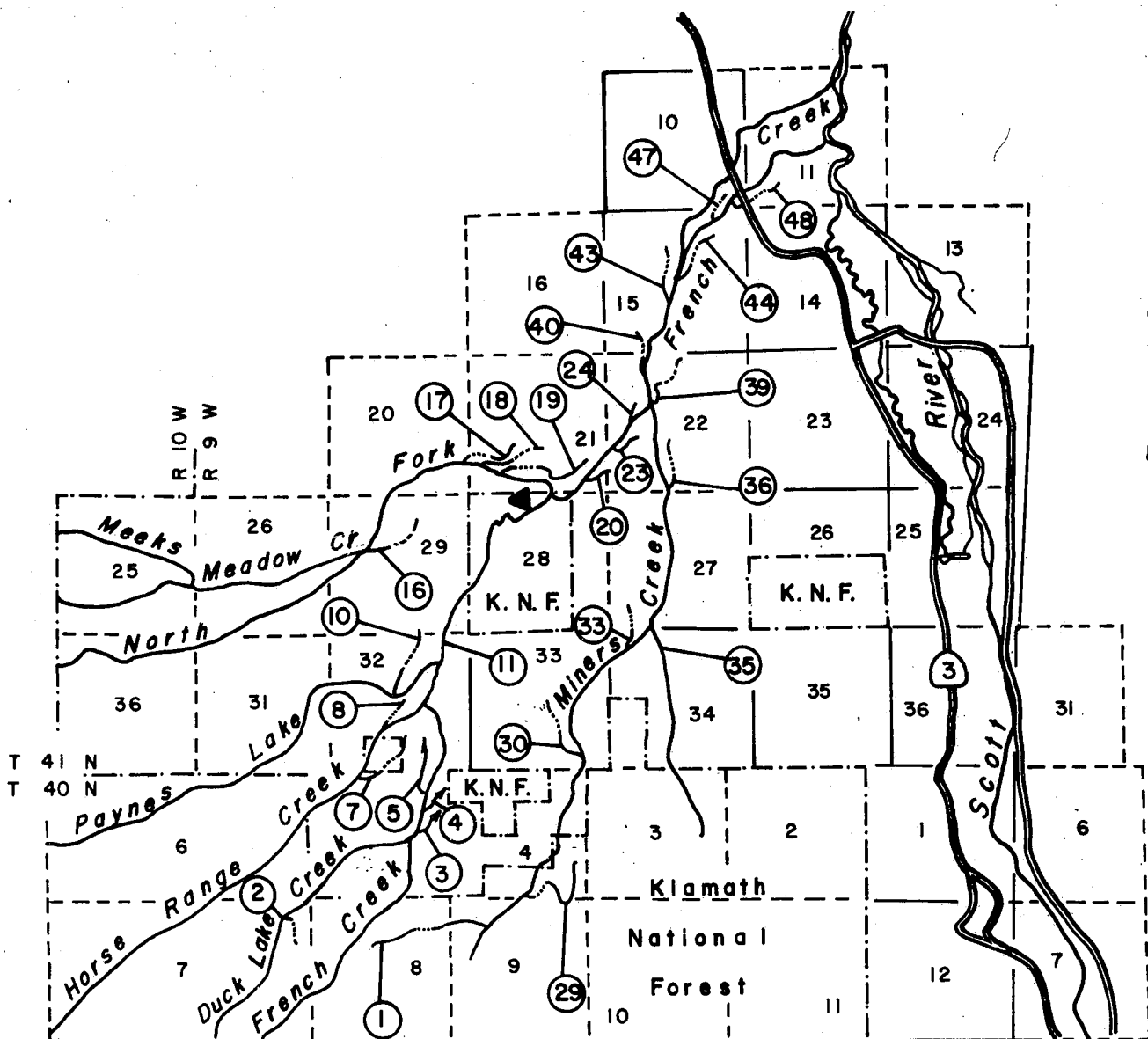


INDEX MAP
SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 57
DIVERSIONS FROM FRENCH CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1,2,29	Fuglistaler	2.50
3,30	Danielson	2.08
4,33,35	Lewis	2.33
5	Wainwright, Murphy, Petterson	3.17
7,8,10	Johnson	1.93
11	MacGowen, Byers	2.36
16	International Paper Co., Thompson	0.06
17	T-D Ranch, J.A.F.M. Co., Veal	7.32
18	Wilson	0.49
19	S. P. Land Co.	0.14
20	Ventrella, Larsen, Hauex, Hughes	0.23
23,40	Ventrella	1.65
24	Wilson	0.12
36	Larsen	0.25
43	Christen, T-D Ranch	4.53
44	Oxley, T-D Ranch	2.09
47	Christen, T-D Ranch	0.76
48	Spencer	0.76

Figure 13a



DIVERSIONS FROM FRENCH CREEK, SCOTT RIVER WATERMASTER SERVICE AREA

SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 58

1983 Daily Mean Discharge
(In cubic feet per second)

French Creek Above North Fork French Creek

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1			36	172	125	26	29	1
2			36	137	120	25	21	2
3			38	137	88	22	17	3
4			40	134	82	21	14	4
5			41	134	82	19	12	5
6			39	131	73	17	11	6
7			38	131	65	16	11	7
8			38	131	57	16	11	7
9			36	123	48	15	10	9
10			36	128	43	14	10	10
11			35	125	43	14	9.7	10
12			34	125	48	12	8.5	12
13			36	125	53	15	8.5	13
14			41	122	53	16	7.8	14
15			45	122	43	13	7.8	15
16			47	122	38	12	7.5	16
17			49	137	36	11	6.9	17
18			57	120	35	11	6.9	18
19			70	97	34	10	6.9	19
20			97	90	34	12	6.9	20
21			128	84	34	13	6.9	21
22		48	155	93	34	16	7.5	22
23		51	190	93	34	18	9.7	23
24		46	237	88	34	17	8.5	24
25		43	273	82	33	18	8.5	25
26		41	284	88	32	16	8.1	26
27		41	294	88	30	12	7.8	27
28		39	305	88	28	10	7.8	28
29		38	315	88	28	13	7.8	29
30		37	300	78	27	54	7.8	30
31			228		27	38		31
MEAN		42.7	120	114	49.7	17.5	10.1	MEAN
AC-FT		762	7137	6780	3057	1075	603	AC-FT

TABLE 59

DIVERSIONS FROM SHACKLEFORD CREEK AND MILL CREEK

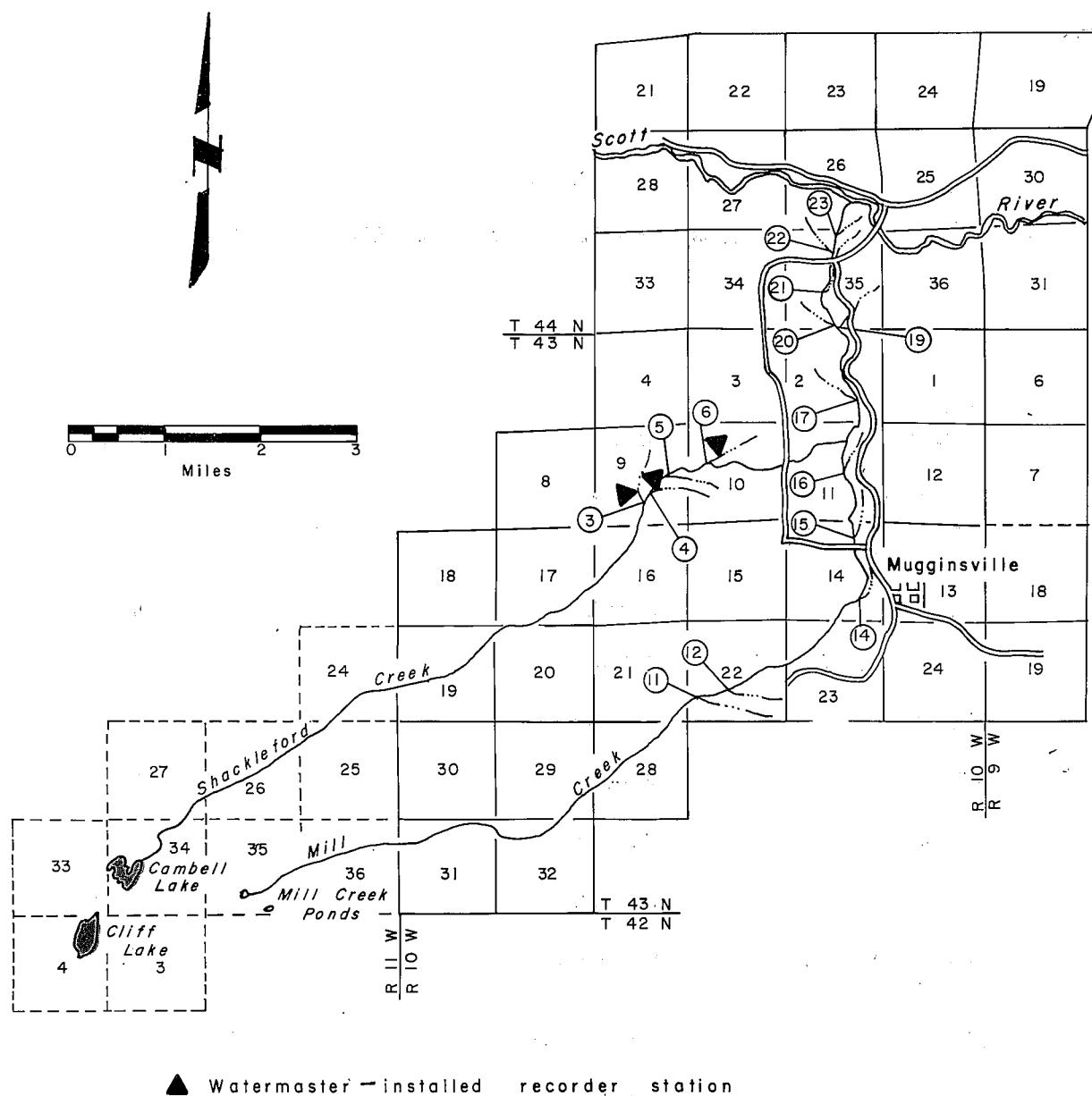
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
3	R. Eastlick Ditch	3.80
4	Shackleford Ditch	11.00
5	Howard-Jones Ditch	4.90
6	Camp Ditch	5.00
11	Eastlick Ditch	10.62
12	Couch Ditch	0.62 ^{1/}
14	China Ditch	1.40
15	Dangel Ditch	0.50
16	Denny Bar Ditch	0.50
17	Freita Ditch	6.60
19	Hammond-Crawford-Lewis Ditch	3.60 ^{2/}
20	Burton-Meamber Ditch	5.80
21	Tozier	4.00
22	Burton	1.20 ^{3/}
23	Burton	1.20 ^{3/}

^{1/} Out of 11 or 12

^{2/} Plus rights not in service area

^{3/} In either 22 or 23

Figure 13b

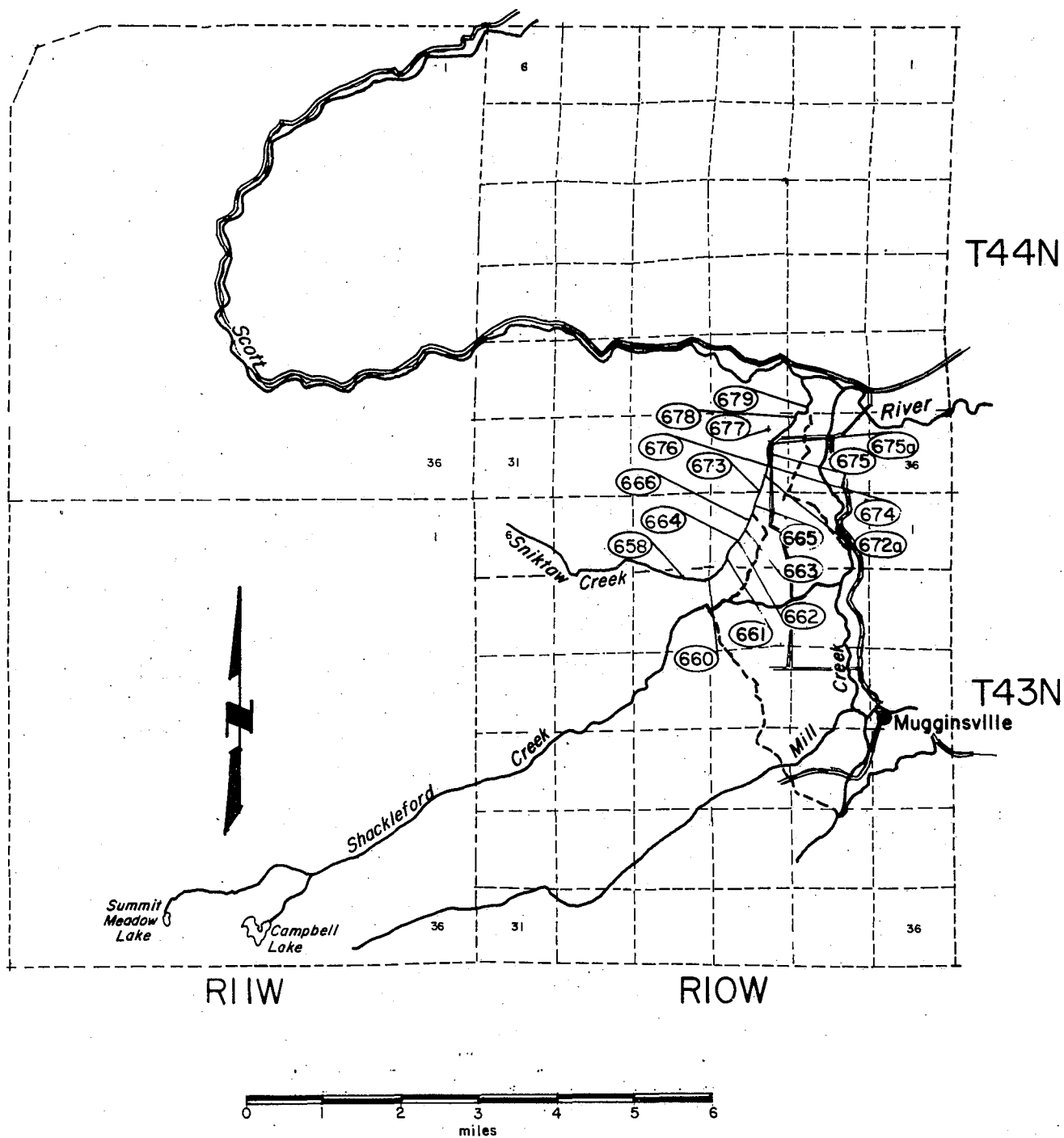


DIVERSIONS FROM SHACKLEFORD CREEK AND MILL CREEK, SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 60
DIVERSIONS FROM SNICKTAW CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
658-4, 661-4, 662-4, 663-4, 664-4	Heide	4.26
660-4	Weathers	0.01
665-4, 666-4	Evans	0.32
672a-4	Robinson	0.01
673-4	Broce	0.01
674-4, 676-4	Burton	1.18
674-4	Mulder	0.74
674-4, 678-4, 679-4	Glascok	2.96
675-4	McClellan	0.01
675a-4	Pearson	0.01

Figure 13c

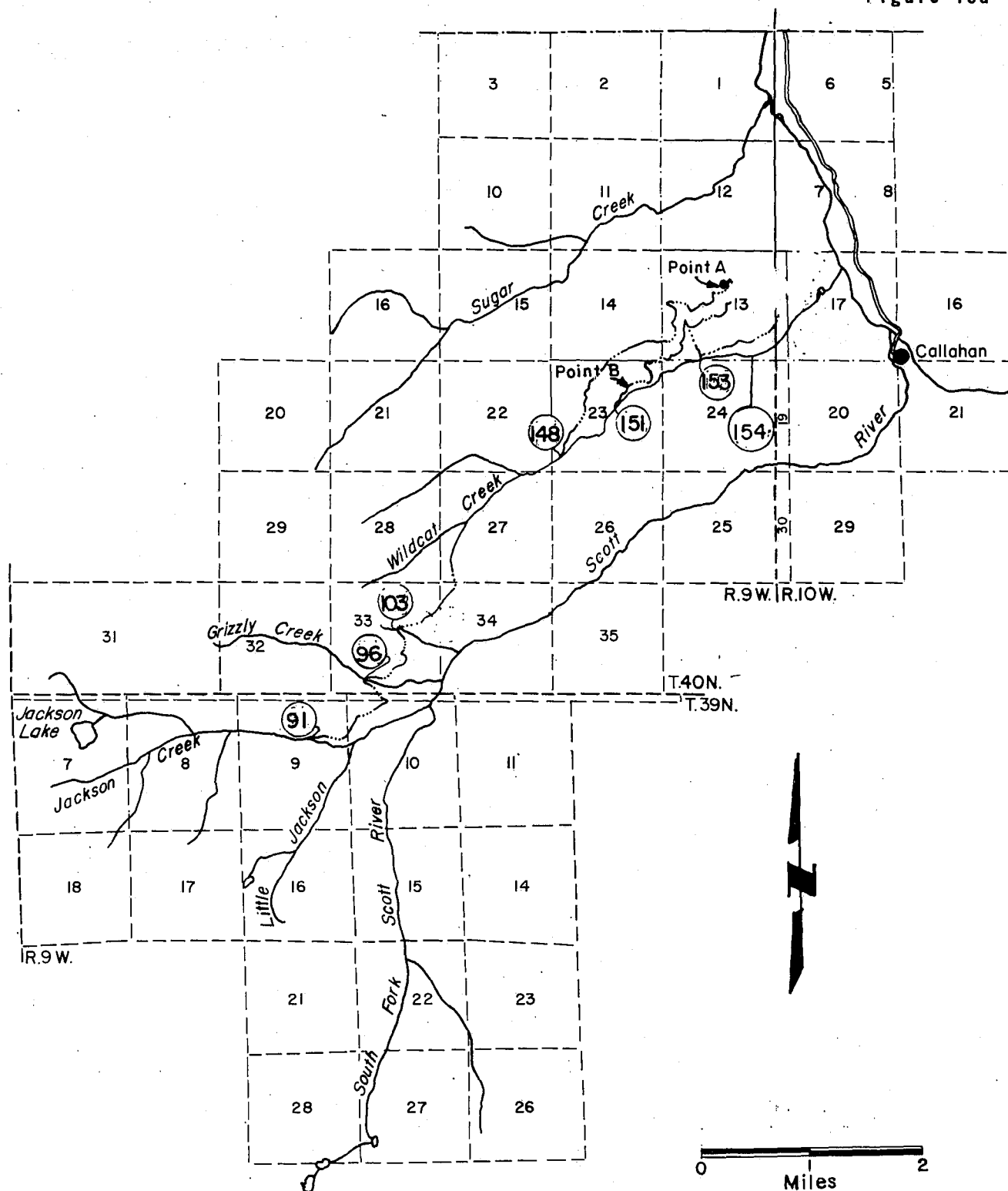


DIVERSIONS FROM SNICKTAW CREEK,
SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 61
DIVERSIONS FROM WILDCAT CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
91,96,103	Kerrigan	4.10
148	Kerrigan	4.76
151	Struckman	1.84
153	Struckman	0.12
154	Kerrigan	0.40

Figure 13d



DIVERSIONS FROM WILDCAT CREEK, SCOTT RIVER WATERMASTER SERVICE AREA

SEIAD CREEK WATERMASTER SERVICE AREA

The Seiad Creek service area is in northwestern Siskiyou County near the town of Seiad Valley. There are 51 water right owners in the area, with total allotments of 6.82 cfs. Seiad Creek, a major source of supply for the area, has two tributaries, Canyon Creek and Darky Creek, that join the main stream from the north near the head of Seiad Valley. Seiad Creek traverses the northerly portion of the valley while the main body of agricultural land lies to the south.

The Seiad Creek service area comprises Seiad Valley and a two-mile strip of land upstream. Seiad Valley extends from the Klamath River to the mouth of a canyon about a mile to the northeast. The elevation of the valley is about 1,400 feet.

Basis of Service

The Seiad Creek watermaster service area was created on November 6, 1950 and includes all of the water rights of Seiad Creek stream system, as established by the Siskiyou County Superior Court in statutory adjudication Decree No. 13774.

Water Supply

Snowmelt from the higher elevations is the main source of water to Seiad Valley, with flows from springs and seepage providing some water in the summer and fall. The watershed of the Seiad Creek stream system includes the heavily forested, steep mountainous area of the southern slopes of the Siskiyou range in Siskiyou County. It varies in elevation from 6,700 feet along the crest of the Siskiyou Mountains bordering the basin on the north, to about 1,400 feet at the Klamath River on the south. The stream system drains an area of about 29 square miles. Of these, 17 square miles are tributary to the main stream, 9 square miles are tributary to Canyon Creek, and 3 square miles are tributary to Darky Creek.

Method of Distribution

Irrigation of the agricultural land is done by wild flooding. Diverted water is mainly used for domestic gardens and lawns. Two diversions, 8 and 8A, are pump diversions for domestic water and are on Canyon Creek. Distribution of the remaining water is by pumps, small ditches and laterals to the places of use.

Seiad Creek Decree provides for two separate areas of distribution within the service area. The main stream system is operated under a four-priority class method, whereas Canyon Creek, the major tributary to the Seiad Creek system, is operated under a two-priority class method.

Seiad Creek 1983 Distribution

Watermaster service in the Seiad Creek service area began April 1 with Lester L. Lighthall, Water Resources Technician II as watermaster. Kenneth E. Morgan, Water Resources Engineering Associate, served as watermaster from August 11 to September 30.

The water supply was far above average. There was surplus flow below the lowest user during the season. Diversion 4 and 7 have been inactive since the 1964 flood. Barry W. and Terril Mattson purchased a decree water right of 0.02 cfs from Tract 3 and also received permit 19085 for 0.01 cfs.

TABLE 62

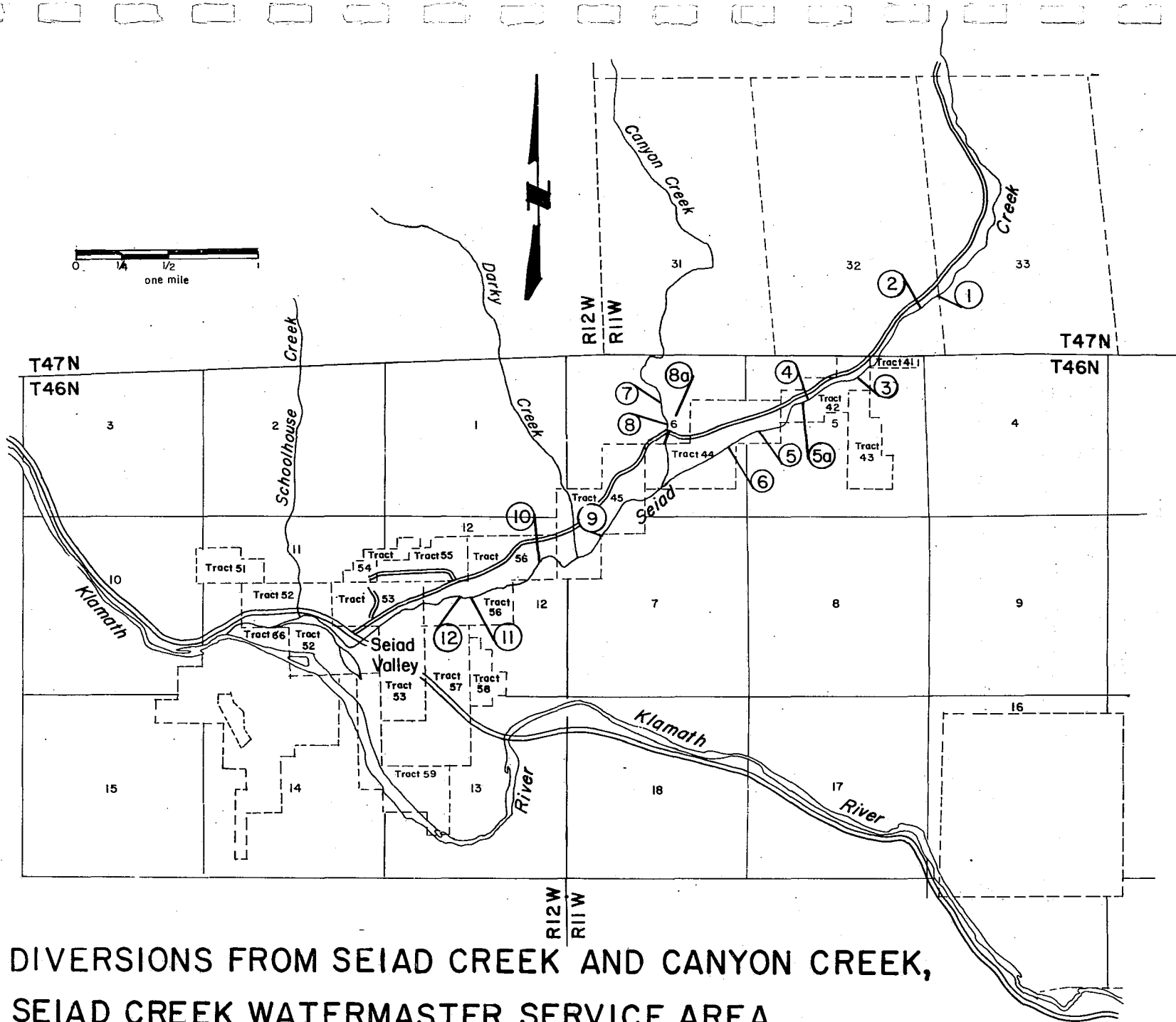
DIVERSIONS FROM SEIAD CREEK AND CANYON CREEK

Seiad Creek

<u>Diversion Number</u>	<u>Name</u>	<u>Decreed Water Right cfs</u>
2,3	Robinson, Sr.	0.60
4,5a,5, 6 or 9	Burstad	1.20
4	Priddy	0.06
5 or 12	Arroyo Seco Gold Dredging Co. and Yreka Gold Dredging Co.	2.70
9 or 10	Shadburne	0.60
10	Arroyo Seco Gold Dredging Co. and Yreka Gold Dredging Co.	0.90
11	Smith	0.10

Canyon Creek

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
7	Burstad	0.50
8	Robinson	0.06
8a	Priddy	0.10



DIVERSIONS FROM SEIAD CREEK AND CANYON CREEK,
SEIAD CREEK WATERMASTER SERVICE AREA

SEIAD CREEK WATERMASTER SERVICE AREA

TABLE 63

1983 Daily Mean Discharge
(In Cubic Feet Per Second)

SEIAD CREEK ABOVE ALL DIVERSIONS

1983- No record, surplus water in Seiad Creek the entire season.

SHASTA RIVER WATERMASTER SERVICE AREA

The Shasta River service area is in the central part of Siskiyou County. Willow Creek and Cold Creek were changed from the Klamath River watermaster service area to the Shasta River watermaster service area in 1983.

The water supply comes from Shasta River and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson Creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy Creeks, and Shasta River west of Interstate 5, rises on the eastern slopes of the Trinity Mountains. All these streams join the mainstem Shasta River above Lake Shastina (Dwinnell Reservoir) near the town of Weed. As the Shasta River flows northward from Lake Shastina to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

Shasta Valley is about 30 miles long and 30 miles wide. In the center of the valley are many small, cone-shaped, volcanic hillocks that divide the area into separate parts. Because of these formations, only about 141,000 acres of about 507,000 acres in the valley are irrigable. The valley floor elevation averages about 3,000 feet.

Willow Creek is in Siskiyou County, about 10 miles northeast of Montague. It is the major source of water and rises on the west slope of the 7,800-foot Willow Creek Mountain, east of the service area. It flows northwest through about 11 miles of rolling hills to its confluence with the Klamath River. The Willow Creek area is about 8 miles long by 1 mile wide and varies in elevation between about 2,600 and 4,000 feet.

Cold Creek is just south of Copco Lake, a hydroelectric power reservoir on the Klamath River in the extreme northern part of Siskiyou County. Yreka is 30 miles southwest of the Cold Creek stream system.

Elevations within the Cold Creek watershed range from 2,900 feet to about 6,500 feet.

Maps of the major stream systems in the Shasta River service area are presented as Figures 15 through 15i, pages 153 through 171.

Shasta River

Basis of Service

The Shasta River watermaster service area was created on March 1, 1933. The appropriative water rights on this stream system were determined by a statutory

adjudication that resulted in Decree No. 7035, Siskiyou County Superior Court, dated December 29, 1932.

The decree lists the water rights of the entire stream system by the names of the users. The rights supervised by the watermaster are broken down into eight separate schedules. These are: Shasta River above its confluence with Big Springs Creek, 43 priorities; Boles Creek, 20 priorities; Beaughan Creek, 5 priorities; Jackson Creek, 7 priorities; Carrick Creek, 13 priorities; Parks Creek, 25 priorities; Shasta River below its confluence with Big Springs Creek and Big Springs Creek and tributaries, 29 priorities; and Little Shasta River, 7 priorities. Additional schedules include Willow Creek, Yreka Creek, and miscellaneous independent springs, gulches, and sloughs, but these are not included in the service area.

Montague Water Conservation District has appropriative rights for storage of Shasta River and Parks Creek water in Lake Shastina. By agreement with the District, five nearby downstream users receive water from storage in lieu of their decreed continuous flow allotments. The watermaster handles the reservoir releases for these users as well as for the district itself. A peculiarity of the Shasta River decree is that it defines only appropriative rights and excludes a number of riparian users on the Lower Shasta River. Owners of these rights are not subject to watermaster supervision, causing considerable distribution problems during seasons of short water supply.

Water Supply

The water supply for Shasta Valley comes from snowmelt runoff, springs and underground flow, and occasional summer thundershowers. In several parts of the stream system, the springs from underground flow are enough to supply most allotments throughout the season. Much of the underground flow comes from the northern slopes of Mount Shasta, which rises 14,162 feet at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is little surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River get much of their water from snowmelt runoff, usually enough to supply allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Lake Shastina, Big Springs, and Lower Shasta River have enough runoff from springs to supply many of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River service area are in Tables 66 through 68 pages 150 through 151, and Table 70, page 152. The daily mean storage in Lake Shastina is in Table 69, page 152.

Method of Distribution

Irrigation of permanent pasture and alfalfa lands is mainly by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands.

Water is routed by diversion dams and then carried by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 60 cfs and a length of about 14 miles. Water is also supplied to ditch systems by pumped diversions, the three largest belonging to two irrigation districts and a private water users association. Some riparian lands are also served by pump diversions.

There are many privately owned storage reservoirs in the area. Water from these reservoirs supplements continuous-flow allotments.

Because of their large rights, close surveillance of the two public agencies, Grenada and Big Springs Irrigation Districts, and the privately operated Shasta River Water Users Association, is very important, particularly in dry years. Control of releases from Montague Water Conservation District's Dwinnell Reservoir (Lake Shastina) is another responsibility of the watermaster. This includes measurement of deliveries of stored water to users just below the dam.

1983 Distribution

Watermaster service began April 1 in the Shasta River service area and continued through September 30 with Lester L. Lighthall, Water Resources Technician II, as watermaster.

The water supply in the service area was above average during the season.

Parks Creek. The flow in Parks Creek was enough to supply all priorities, including water to Montague Water Conservation District Bypass Canal to the Shasta River, until July 1. The flow diminished until the second priority allotments of 6 cfs were at 90 percent by the end of July and remained that for the rest of the season.

Water users downstream from the third and fourth priorities got part of their allotments during the latter part of the season from return flow and from water rising in the streambed.

Upper Shasta River. The flow in the Shasta River was enough to fill all priorities until the end of July. By August 25, the river was down to fourth priorities and all of the water was turned into the Yreka Ditch. The flow declined until Yreka Ditch users were only getting 80 percent of their rights. It stayed that way for the rest of the season.

Lower priority users got only part of their rights below the Yreka Ditch, from return flow and channel increase.

Boles Creek and Shasta River to Lake Shastina (Dwinnell Reservoir). Boles Creek and this part of the Shasta River were operated as one stream under a longstanding oral agreement among the water right owners. The water is distributed on a correlative, equal-priority basis. By the end of July, all water rights were set at 100 percent of their allotments and stayed that way the rest of the season. The Roseburg Lumber Company did not operate this season, so more water was available for the other users.

Beaughan Creek. The flow at Beaughan Creek was enough for all demands (five priorities) for the entire season.

Carrick Creek. The water supply in Carrick Creek was enough to satisfy all allotments (13 priorities) during the entire season.

Little Shasta River. There was enough water in the Little Shasta River to satisfy five priority allotments (seven priorities in all) until July 1, when full regulation became necessary. The flow continued to decrease to 50 percent of fifth priority allotments by September 1, then stayed constant for the rest of the season.

Dwinnell Reservoir. Releases from Lake Shastina (Dwinnell Reservoir) to the Montaque Water Conservation District began on April 20 and continued into October. By agreement with the Montaque Water Conservation District, water users on the Shasta River below Dwinnell Reservoir got stored water from the reservoir on demand instead of their natural flow rights. The agreed allotment totals and the amount delivered to each user this season are shown on the following page.

Big Springs. The flow of the springs was enough to satisfy all three of the users out of Big Spring Lake all season. Big Springs Irrigation District did not pump from Big Spring Lake the entire season.

Lower Shasta River. The water supply in the lower Shasta River was enough to satisfy all allotments (29 priorities) all season.

Willow Creek

Basis of Service

Willow Creek has had a long history of litigation. The present basis of service might be said to have been initiated in 1949 when a civil suit was referred to the Department of Public Works, Division of Water Resources, as referee. The matter was never finalized by a decree. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed the Department of Water Resources to supervise distribution of water in accordance with an earlier agreement between the users defining their respective rights. Accordingly, Klamath River Watermaster Service Area (formerly Willow Creek Watermaster Service Area) was created on June 22, 1972, and service began on July 1, 1972.

There are three water users in the service area. Distribution is on a fractional basis until the flow drops to a specified amount below the upper two users. At that time, the total flow is rotated between the upper two users.

Water Supply

The main source of water for the Willow Creek stream system is from snow that accumulates at high elevations on the drainage area during the winter months. The spring flow from the melting snow begins late in March or early April and is almost entirely gone by June. Thereafter, the streamflow decreases rapidly

until about July 1. From then until rainy season begins, the flow remains at a more or less sustained low-flow stage sufficient for domestic and stockwatering purposes on the two upper ranches only.

Method of Distribution

Both sprinkler and flood irrigation are used in the Klamath River service area. The upper water user has the option of using gravity diversions for either flood or sprinkler irrigation. The middle user relies entirely on runoff from the upper user's flood irrigation. Water is diverted into ditches by temporary rock or gravel dams. The lower user in the area uses both flood and sprinkler irrigation during the early season when the supply is abundant. As the supply dwindles, the remaining water is pumped from a sump to the sprinkler system.

1983 Distribution

Watermaster service in the Willow Creek service area began on April 1 and continued until September 30 with Lester L. Lighthall, Water Resources Technician II as watermaster during this period.

Since watermaster service began in 1972 on this creek, no recorder has been installed. However, the water users indicated that the supply was above average.

There was sufficient water to distribute to all three users according to their fractional allotments until the middle of August when distribution was started on a five-day rotation between the two upper users. This rotation continued for the rest of the season.

In our twelve years of record, the average starting date for rotation was July 20. This year, rotation started on August 15 since the water supply was above average. The diversions were as follows:

Diversion Number

1	More and Sylva
1a	More pipeline
2,3	Sylva upper and lower ditch
5,6	Cook upper and lower ditch

Cold Creek

Basis of Service

A statutory adjudication of Cold Creek in 1978 ordered the Department of Water Resources to provide watermaster service at Diversions 2, 3, and 4, and at the division weir on the Silva-Lennox Ditch. Watermaster service began April 1, 1981.

Water Supply

The water supply of the Cold Creek stream system usually satisfies requirements until July.

Method of Distribution

Both sprinkler and flood irrigation are used in Cold Creek service area.

1983 Distribution

Watermaster service on Cold Creek began April 1, 1983, and continued through September 30, 1983, with Lester L. Lighthall, Water Resources Technician II, as watermaster.

The flow in Deer Creek above Diversion 21 receded to less than 1.02 cfs in early July. When the flow in Deer Creek above Diversion 21 recedes to 1.02 cfs or less, diversion into the Silva-Lennox ditch is increased to a maximum of 3.93 cfs as measured at the diversion weir.

At no time during the 1983 irrigation season was the flow sufficient at Diversion 2 for any diversion into the East Fork of Cold Creek.

TABLE 64

ALLOTMENTS TO CLAIMANTS UNDER WATERMASTER SERVICE FROM
UPPER PORTION OF THE COLD CREEK STREAM SYSTEM

Name of Claimant	: Diversion :		: Area :	: Allotments by Priority :			: Total	
	: No. on : Use :			: Served :	: <u>in Cubic Feet per Second</u> :			
	: SWRCB Map :				: Acres :	1st :		2nd :
Lemos	1 and 2	Irr. and Power	160	3.20 <u>a</u> /			3.20	
O'Neill	1 and 2	Irr.	6	0.18 <u>a</u> /			0.18	
Fogarty	1 and 2	Irr.	20	0.55 <u>a</u> /			0.55	
Boos	3 and 4	Irr.	125		2.50 <u>b</u> /		2.50	

a/ Silva-Lennox Ditch. During the irrigation season the flow in the Silva-Lennox Ditch as measured at the division weir shall be limited to 2.91 cfs when the flow in Deer Creek above Diversion 21 exceeds 1.02 cfs. When the flow in Deer Creek above Diversion 21 recedes to 1.02 cfs or less, diversion into the Silva-Lennox Ditch may be increased to a maximum of 3.93 cfs as measured at the division weir.

Flow in the Silva-Lennox Ditch shall be divided at the division weir as follows: when the flow is 2.91 cfs or less, it shall be divided 1/4 to the O'Neill-Cobb lateral and 3/4 to the Lemos lateral; when the flow is more than 2.91 cfs, it shall be divided 0.73 cfs to the O'Neill-Cobb lateral and all other flows to the Lemos lateral.

b/ High Ditch and Low Ditch. Carter, Lucia, Boos, and B. Clifford are entitled to intercept and divert from Springs No. 3 and No. 4 up to 4.16 cfs into the High Ditch between Diversion Points 6 and 3 as set forth in Schedule D for domestic and stockwatering purposes and for irrigation of lands as set forth in Schedule A. The High Ditch begins at Diversion 6 and extends northeastward crossing Cold Creek and, being augmented thereby at Diversion 3, continues northwestward to its end in the southwest quarter of Section 5. On a continuous flow basis, the combined allotment for Boos and B. Clifford at Diversions 3 and 4 shall not exceed 2.52 cfs.

TABLE 65

DELIVERIES TO NATURAL FLOW WATER RIGHT OWNERS
BELOW DWINNELL RESERVOIR - 1983

Name of Water Right Owner	Allotment in	Allotment Delivered From Dwinnell Reservoir	
	A/F	A/F	% of Allotment
Flying L Ranch (Gragnani)	198	0	0
Hole-in-the-Ground Ranch (Gragnani)	596	0	0
Seldom Seen Ranch (Gragnani)	924	360	81
Taylor Ranch (Taylor)	1,200	1,200	100
Hidden Valley Ranch (Overturf)	464	0	0
Totals	3,382	1,560	

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 66

1983 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR YREKA

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	1760	1110	404	598	147	74	144	1
2	2600	911	400	617	152	72	141	2
3	2250	753	364	546	140	62	132	3
4	1760	693	352	445	128	65	111	4
5	1320	606	340	381	118	68	125	5
6	1160	469	325	371	119	61	115	6
7	1050	432	309	354	133	71	102	7
8	952	414	300	332	127	70	99	8
9	803	399	293	441	128	64	87	9
10	677	378	267	386	129	54	89	10
11	624	365	236	404	121	46	88	11
12	654	356	213	413	121	45	99	12
13	837	337	210	371	117	46	99	13
14	919	319	196	323	104	79	96	14
15	1000	301	180	279	124	63	89	15
16	944	295	186	254	124	78	85	16
17	946	281	176	233	103	95	89	17
18	851	277	175	208	92	59	89	18
19	661	250	178	201	86	67	101	19
20	575	224	182	193	95	72	108	20
21	548	254	187	172	89	71	108	21
22	510	249	194	157	81	140	116	22
23	484	250	203	152	74	186	168	23
24	586	282	240	149	60	164	163	24
25	603	337	299	142	60	155	145	25
26	594	454	352	127	64	126	137	26
27	622	450	444	156	72	128	133	27
28	563	366	531	143	100	120	138	28
29	526	348	580	149	98	117	141	29
30	746	350	614	136	83	164	164	30
31	1210		608		75	150		31
MEAN	946	417	308	294	105	91.4	117	MEAN
AC-FT	58190	24810	18920	17520	6470	5620	6940	AC-FT

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 67

1983 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR EDGEWOOD

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	684	232	163	288	207	46	38	1
2	388	214	145	248	215	43	34	2
3	308	192	141	237	190	42	34	3
4	273	175	153	242	177	39	32	4
5	259	165	157	242	180	36	30	5
6	236	165	141	245	187	33	27	6
7	234	148	128	259	180	31	25	7
8	354	143	124	282	166	32	27	8
9	344	144	121	292	140	29	29	9
10	306	140	128	294	129	27	26	10
11	491	134	113	268	115	28	25	11
12	388	120	117	225	104	27	26	12
13	292	102	122	200	113	29	25	13
14	248	91	143	202	115	26	25	14
15	240	87	172	210	100	26	24	15
16	240	85	180	215	90	24	24	16
17	220	91	190	242	75	24	22	17
18	197	100	207	237	67	24	24	18
19	177	145	235	212	62	26	25	19
20	178	156	273	200	58	31	25	20
21	168	198	320	187	57	33	25	21
22	196	230	336	195	54	45	27	22
23	189	357	360	225	51	41	38	23
24	218	253	394	212	52	38	33	24
25	198	190	391	200	55	36	30	25
26	184	164	377	202	54	31	28	26
27	204	163	394	207	46	27	29	27
28	174	192	397	205	45	26	29	28
29	209	198	440	202	47	27	26	29
30	367	160	421	195	48	28	25	30
31	292		361		46	31		31
MEAN	273	165	237	229	104	32	28	MEAN
AC-FT	16,770	9,790	14,570	13,630	6,400	1,960	1,660	AC-FT

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 68

1983 Daily Mean Discharge
(In cubic feet per second)

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1					113	17	7.5	1
2					95	18	6.0	2
3					89	17	6.0	3
4					83	15	5.7	4
5					83	13	5.2	5
6					80	12	4.9	6
7					64	11	4.9	7
8					58	9.2	4.5	8
9					46	6.7	4.2	9
10					43	6.3	4.2	10
11					41	6.7	4.0	11
12					46	7.5	4.0	12
13					46	7.5	4.0	13
14					41	7.5	4.0	14
15					37	7.1	3.7	15
16					33	7.5	3.4	16
17					30	6.7	3.4	17
18					28	6.3	3.4	18
19				121	27	6.0	3.4	19
20				89	24	6.7	3.4	20
21				129	23	15	3.4	21
22				151	22	17	3.5	22
23				146	22	15	4.5	23
24				125	23	16	4.2	24
25				125	22	13	3.7	25
26				125	21	11	3.5	26
27				125	20	9.2	3.5	27
28				121	20	8.5	3.5	28
29				113	19	6.7	3.5	29
30				102	18	6.7	3.5	30
31					18	7.1		31
MEAN				123	43.1	10.3	4.2	MEAN
AC-FT				2,900	2,600	630	250	AC-FT

SHASTA RIVER WATERMASTER SERVICE AREA
Water Year 1982-83

TABLE 69

LAKE SHASTINA (DWINNILL RESERVOIR)
DAILY MEAN STORAGE IN ACRE FEET

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	24,275	24,365	26,345	34,160	48,166	51,172	49,210	50,020	49,264	49,264	43,214	35,010	1
2	24,200	24,425	26,450	34,245	48,310	50,974	49,174	49,948	50,290	49,264	42,915	34,874	2
3	24,125	24,455	26,555	34,330	48,490	50,254	49,120	49,876	49,894	49,228	42,660	34,721	3
4	24,050	24,476	26,615	34,466	48,634	49,408	49,120	49,894	49,696	49,210	42,320	34,585	4
5	23,965	24,500	26,705	34,619	48,814	49,030	49,246	49,930	49,498	49,120	41,980	34,415	5
6	23,900	24,530	26,795	34,789	48,976	48,616	49,444	50,146	49,300	49,080	41,674	34,225	6
7	23,810	24,560	26,870	34,976	49,084	48,274	49,606	49,930	49,228	49,030	41,385	34,075	7
8	23,720	24,575	26,945	35,112	49,336	47,968	49,786	49,912	49,228	48,940	41,062	33,905	8
9	23,630	24,590	27,005	35,248	49,552	47,968	49,930	49,876	49,300	48,814	40,790	33,718	9
10	23,572	24,605	27,065	35,367	49,534	48,580	50,056	49,876	49,390	48,634	49,450	33,514	10
11	23,502	24,620	27,125	35,486	49,174	49,210	50,182	49,304	49,480	48,490	40,195	33,344	11
12	23,432	24,650	27,200	35,578	48,772	49,750	50,272	49,660	49,408	48,310	39,940	33,174	12
13	23,390	24,665	27,245	35,690	48,274	50,596	50,326	49,534	49,300	48,130	39,685	32,970	13
14	23,390	24,695	27,380	35,775	47,950	50,740	50,326	49,462	49,228	47,896	39,379	32,704	14
15	23,376	24,710	27,545	35,877	48,238	50,524	50,308	49,426	49,228	47,680	39,090	32,480	15
16	23,348	24,725	28,025	36,030	48,364	50,200	50,292	49,408	49,228	47,410	38,835	32,232	16
17	23,320	24,845	29,968	36,234	48,544	49,660	50,254	49,390	49,300	47,230	38,529	32,064	17
18	23,306	25,100	30,560	36,540	48,796	49,480	50,236	49,408	49,408	46,960	38,240	31,840	18
19	23,292	25,196	30,860	36,999	48,742	49,480	50,236	49,408	49,480	46,690	37,958	31,680	19
20	23,292	25,286	31,200	37,254	48,580	49,480	50,272	49,660	49,480	46,510	37,696	31,440	20
21	23,320	25,340	31,600	37,509	48,436	49,480	50,380	49,858	49,426	46,276	37,424	31,296	21
22	23,390	25,370	32,512	37,696	48,400	49,570	50,524	50,200	49,390	46,060	37,220	31,100	22
23	23,530	25,415	32,944	37,985	48,598	49,534	50,740	50,488	49,408	45,790	36,975	31,040	23
24	23,675	25,475	33,194	39,770	48,724	49,480	51,046	51,046	49,408	45,520	36,710	30,970	24
25	23,810	25,505	33,364	40,450	48,904	49,426	50,758	51,136	49,390	45,214	36,540	30,832	25
26	23,870	25,550	33,514	42,745	48,976	49,336	50,434	51,190	49,354	44,926	36,285	30,656	26
27	23,930	25,655	33,684	46,600	49,408	49,246	50,326	51,118	49,354	44,654	36,030	30,448	27
28	23,975	25,745	33,820	47,500	49,588	49,282	50,164	51,046	49,318	44,362	35,775	30,448	28
29	24,080	26,030	33,905	46,942		49,336	50,164	51,046	49,300	44,080	35,605	30,256	29
30	24,200	26,210	33,990	48,004		49,336	50,092	51,100	49,282	43,805	35,435	30,144	30
31	24,290		34,075	47,986		49,336		51,028		43,540	35,180	0	31

SHASTA RIVER WATERMASTER SERVICE AREA

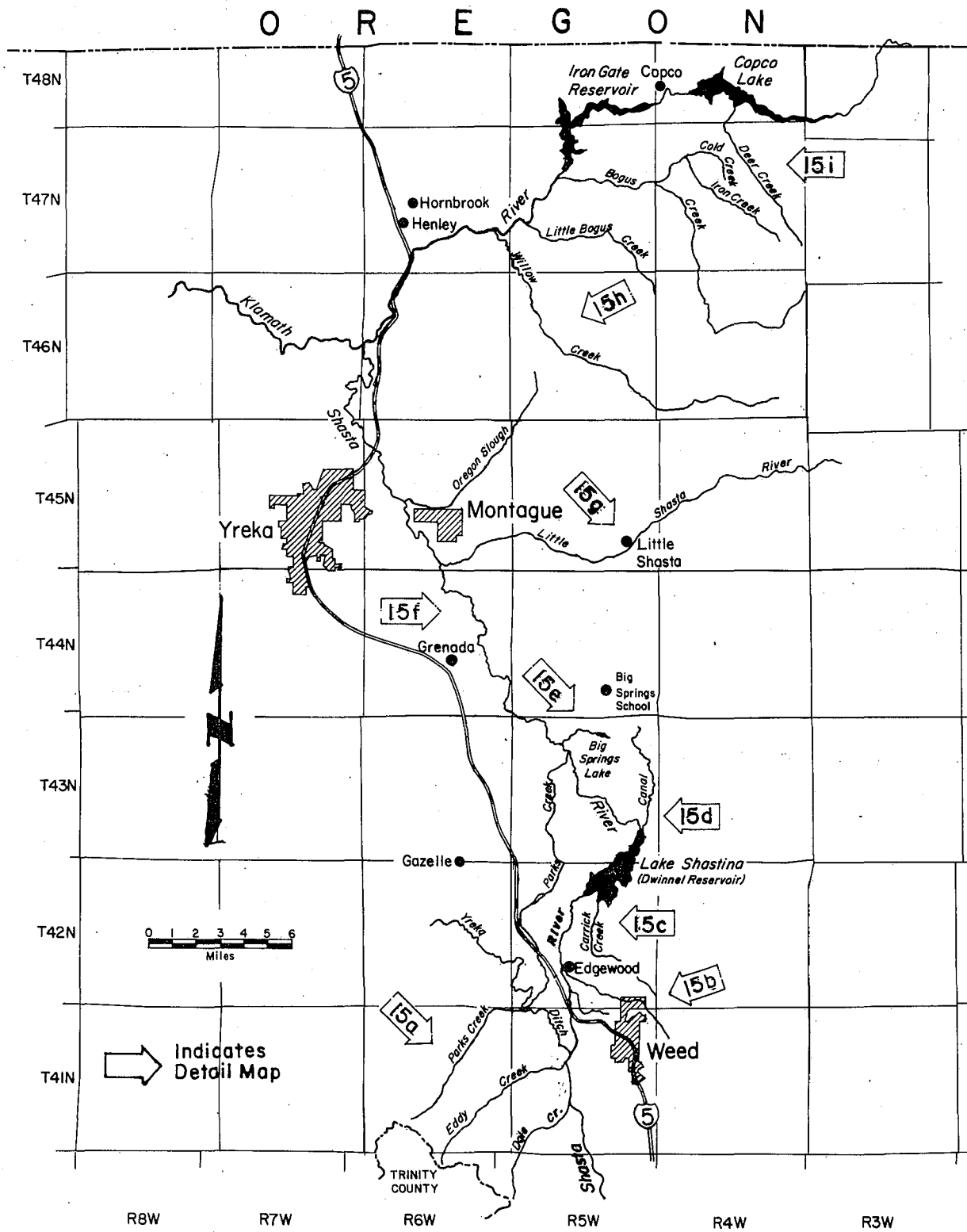
TABLE 70

1983 Daily Mean Discharge
(in cubic feet per second)

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1				490	151	61	144	1
2				500	151	61	144	2
3				393	137	55	117	3
4				351	130	61	107	4
5				338	120	58	117	5
6				338	141	55	113	6
7				330	151	61	107	7
8				326	141	61	103	8
9				368	141	48	97	9
10				343	134	43	97	10
11				351	134	41	97	11
12				351	134	40	97	12
13				330	127	40	100	13
14				310	124	67	103	14
15				282	137	48	97	15
16				267	117	97	97	16
17			168	248	97	55	97	17
18			172	222	87	41	97	18
19			176	215	87	51	107	19
20			179	197	100	61	107	20
21			186	176	84	80	107	21
22			201	165	67	151	137	22
23			211	162	64	162	168	23
24			263	148	58	158	162	24
25			310	141	58	127	141	25
26			359	137	61	117	137	26
27			393	154	77	117	137	27
28			440	154	103	110	137	28
29			520	144	84	103	137	29
30			500	144	67	148	137	30
31			490		61	144		31
MEAN			304	269	107	78	118	MEAN
AC-FT			9060	16016	6595	4800	7031	AC-FT

Figure 15



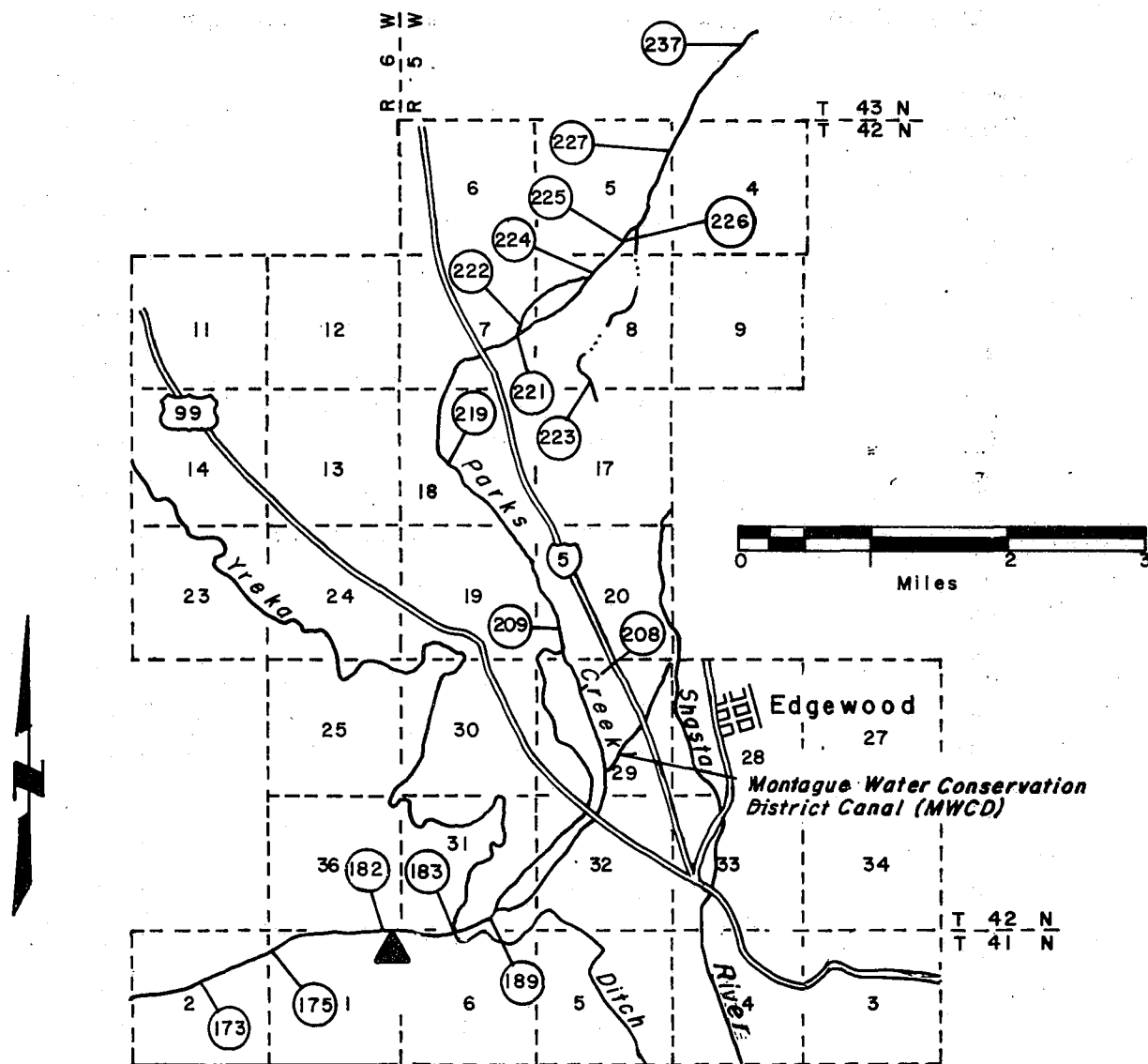
INDEX MAP SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 71
DIVERSIONS FROM PARK CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
173	Vanderbilt	0.70
175	Vanderbilt	1.275
182	Duke, North	<u>1/</u>
183	Yreka Ditch	15.20
189	Duke, South	<u>1/</u>
221-227	Gagnani	17.20
208	Lemos, Bettencourt	1.40
209	Bettencourt	0.90
219-220	Bettencourt	0.85
237	Cardoza	2.98

1/ Allotment of 6.00 cfs in either ditch.

Figure 15a



▲ Watermaster installed recorder station.

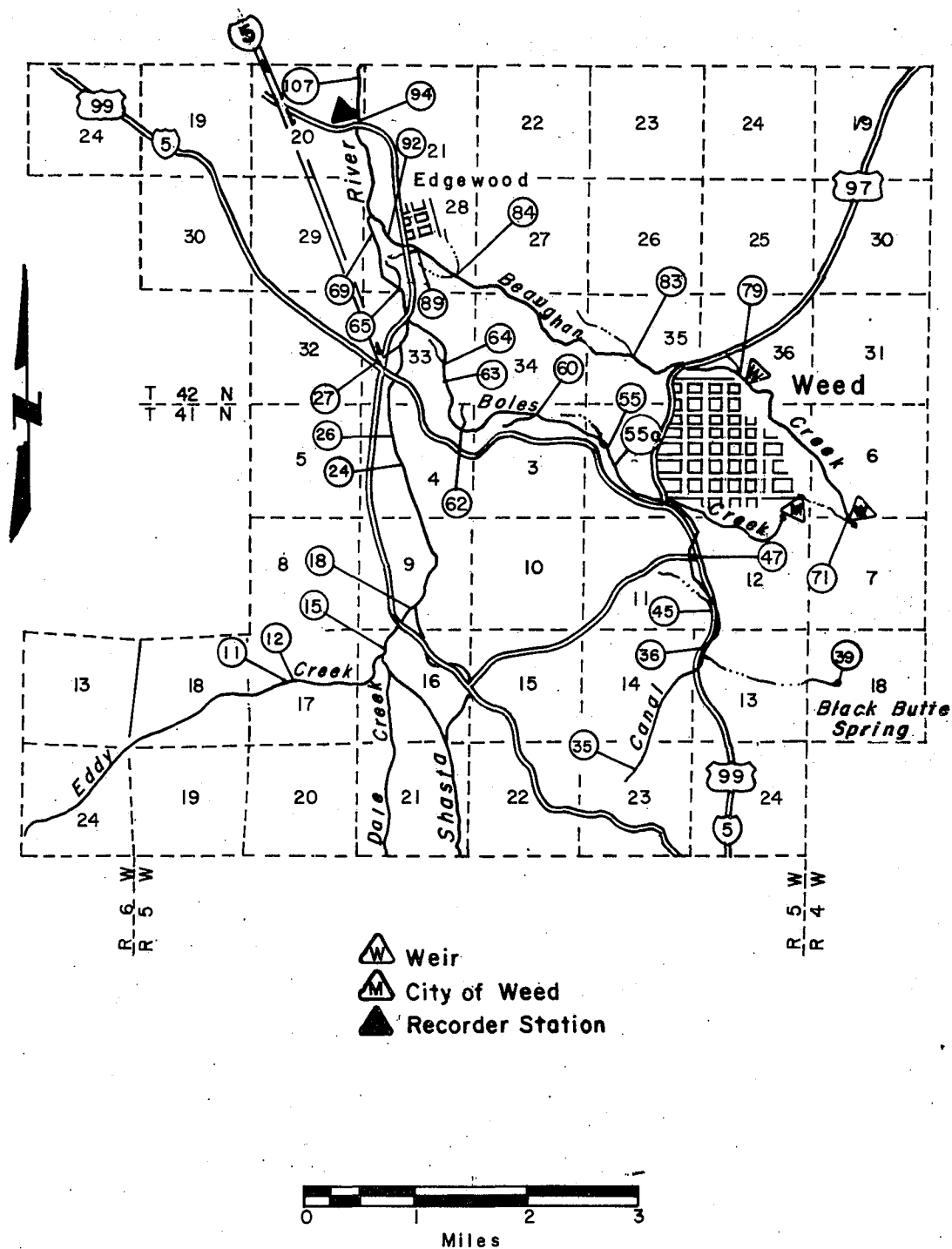
DIVERSIONS FROM PARKS CREEK, SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 72

DIVERSIONS FROM SHASTA RIVER, BEAUGHAN CREEK AND BOLES CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
11-16	Dow Ditch	1.55
12	Hammond-Scott Ditch	9.36
15	Dobkin Ditch	0.60
18	Yreka Ditch	30.00
24	Parker	0.40
26	Mazzini, Mole Richardson Co.	6.21
27	West Neal Ditch	1.00
35	Larson, Meadows, Kenny	0.40
36	International Paper Company	4.00
39	Black Butte Spring	0.50
45	Thompson Ditch	1.05
47	Sullivan Ditch	0.30
55	Salanti Ditch	1.00
55A	Weed Golf Course	0.65
60	Davidson Ditch	0.25
62	Belcastro Ditch	0.10
63	Upper Lemos Ditch	2.60
64	Lower Lemos Ditch	2.06
65	East Neal Ditch	0.80
69	Alexander Ditch	1.60
71-78	Roseburg Lumber Company	4.07
79	Linville	0.45
83	Belcastro	0.55
84-87	Jackson, Freeze, Farmsworth	3.87
89	Ordway	0.40
92	Ordway	0.86
94	Davis	0.65
107-115	Mills Ranch	10.45

Figure 15b

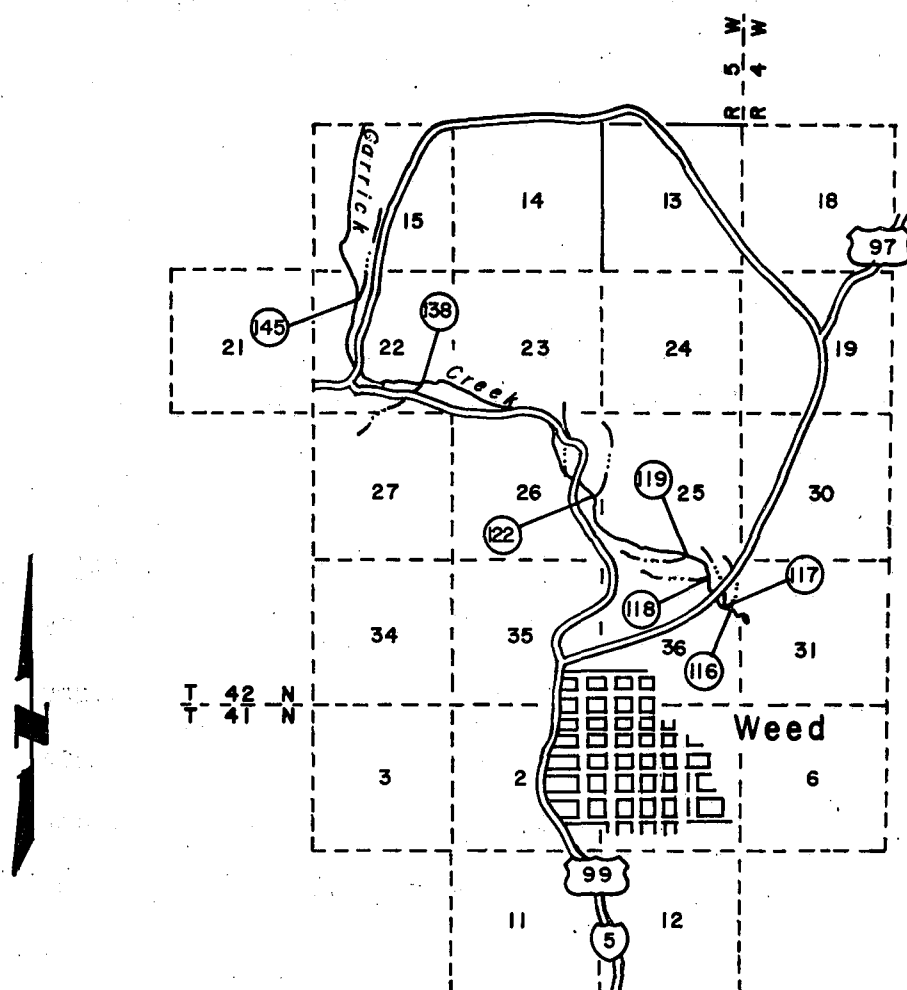


DIVERSIONS FROM SHASTA RIVER
BEAUGHAN CREEK AND BOLES CREEK,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 73
DIVERSIONS FROM CARRICK CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
116	Zwanziger	2.20
117	Goltz	2.20
118	Belcostro-Luiz	0.40
119	Luiz	0.40
122	Hoy	0.86
138	Jackson	1.20
145	Mills	1.10

Figure 15c



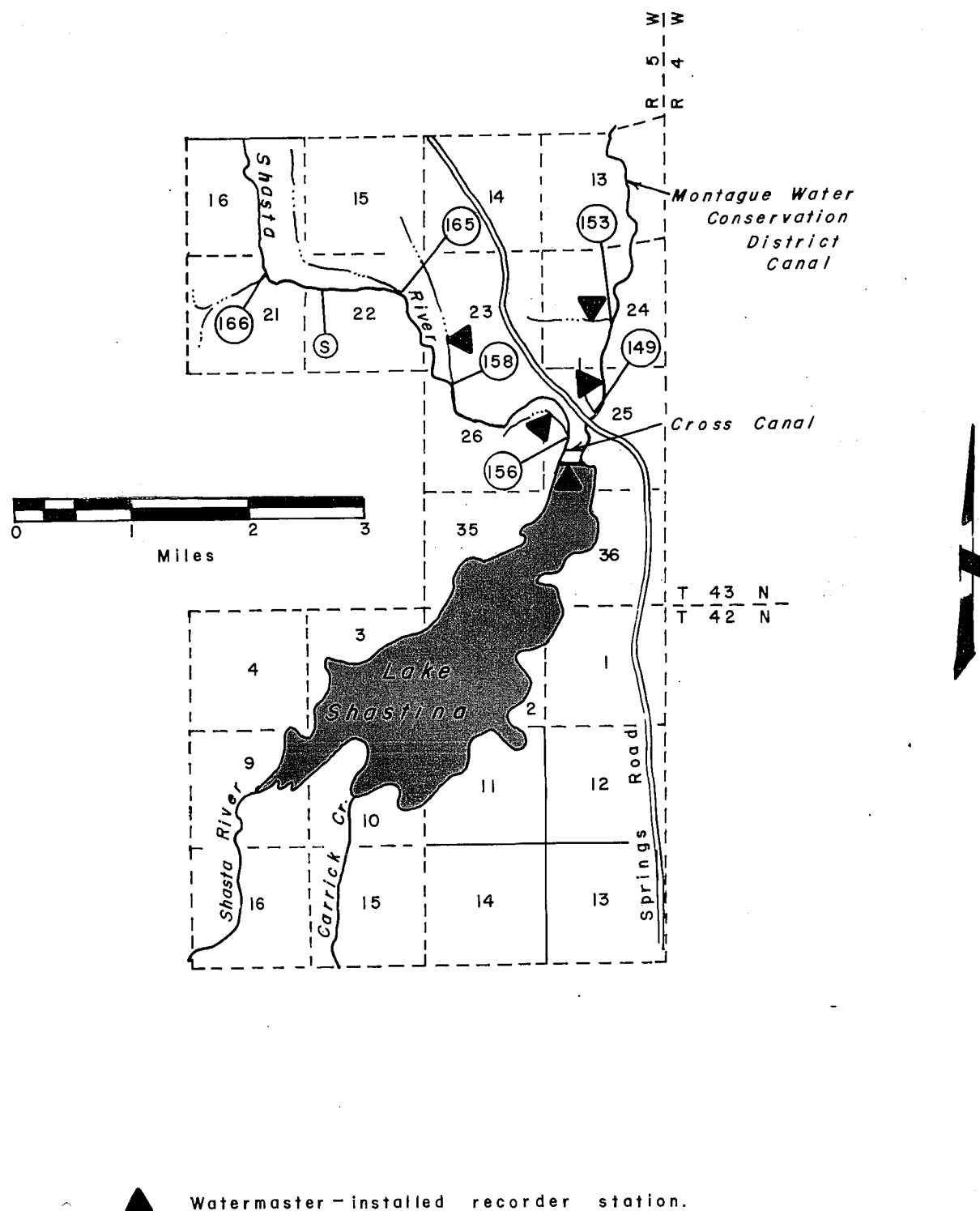
DIVERSIONS FROM CARRICK CREEK
SHASTA RIVER WATERMASTER SERVICE AREA,

TABLE 74
PRIOR RIGHTS BELOW LAKE SHASTINA

<u>Diversion Number</u>	<u>Name</u>	<u>Ac/ft</u>
149	Flying L Ranch	198
153	Taylor Ranch	1,200
156	Seldom Seen Ranch	924
158	Hidden Valley Ranch	464
165-166 ^{1/}	Hole-in-the-Ground Ranch	596
S	Clear Spring	2.5 cfs

^{1/} 2 pumps

Figure 15d

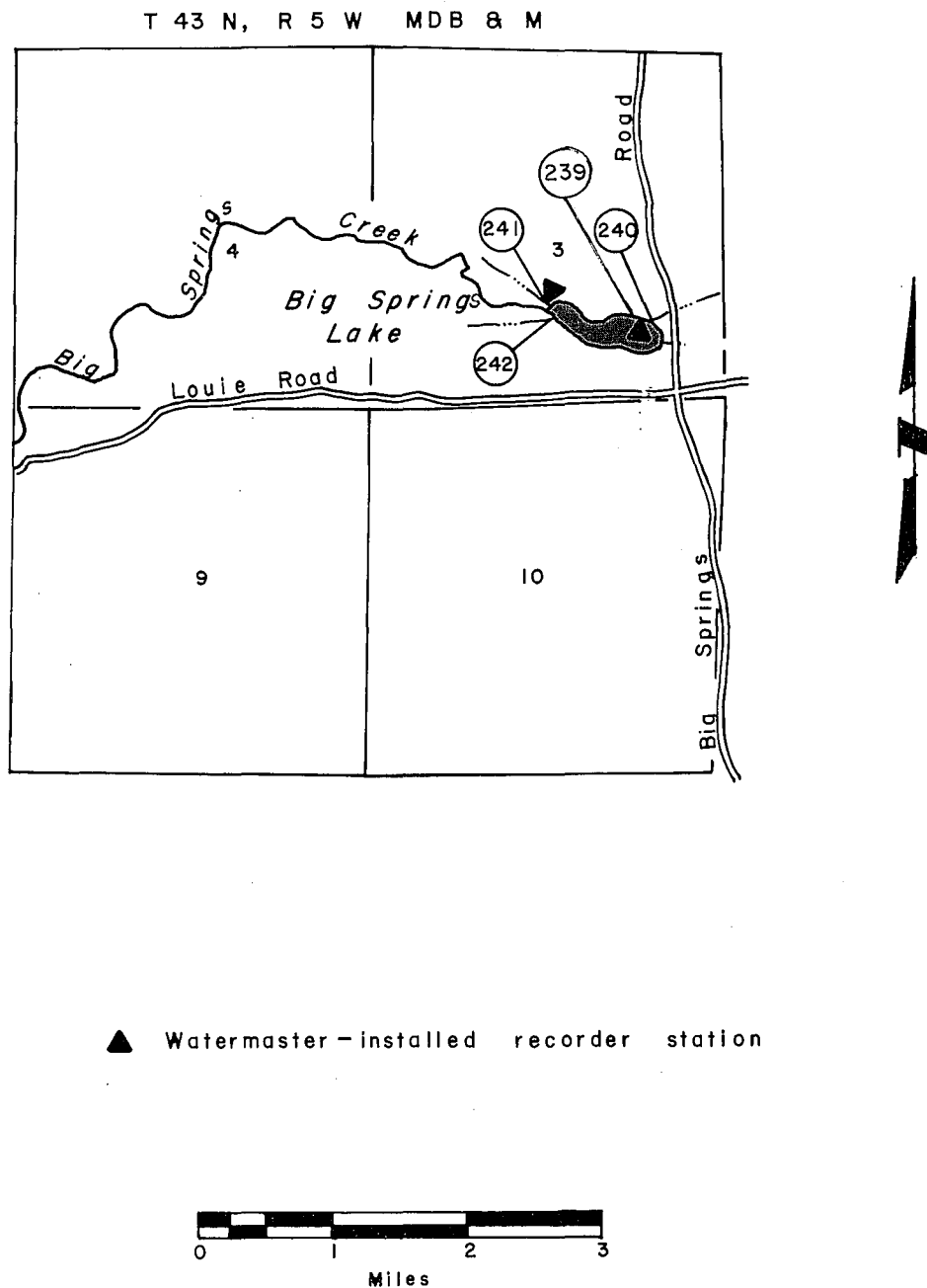


PRIOR RIGHTS BELOW LAKE SHASTINA,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 75
DIVERSIONS FROM BIG SPRINGS LAKE

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
239	Newton, pump	7.50
240	Big Springs I.D.	30.00
241-242	E. Louie Ditch	10.00

Figure 15e



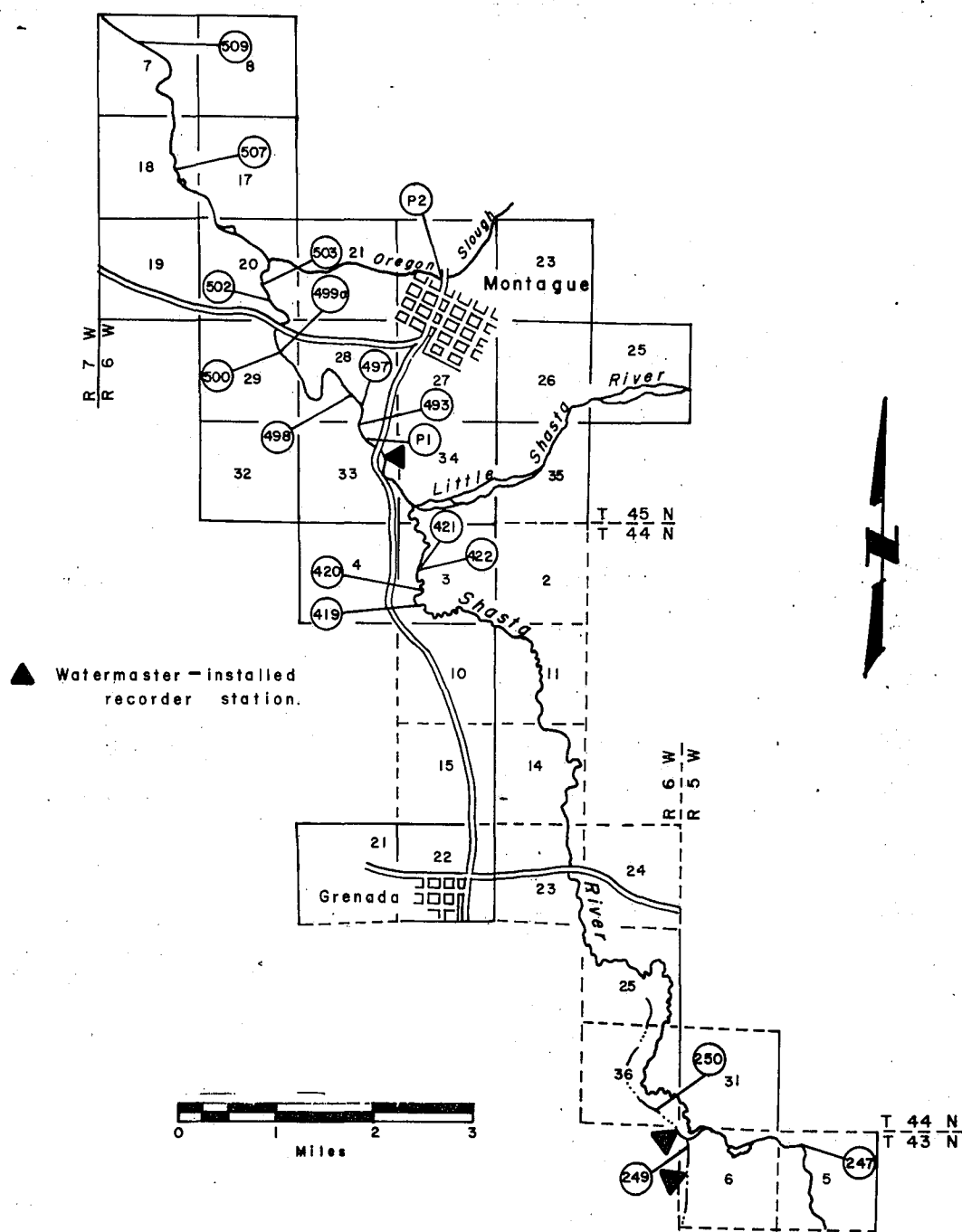
DIVERSIONS FROM BIG SPRINGS LAKE,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 76
DIVERSIONS FROM LOWER SHASTA RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
247	Nelson (pump)	2.37
249	Grenada Irrigation District Pumps	40.00
250	Huesman Ditch	10.91 ^{1/}
419	Shasta River Water Users Association Pumps	42.00
420	Banhart	0.20
421, 422	Kuck	2.25
493	Easton	0.10
497	Flock (pump)	3.96
498	Flock	1.20
499a, 500	Lemos	0.70
502	Flock-Alley	3.80
503	Flock	5.90
507	Flock	0.25
509	Mosely - Johnson	1.75
P1	Meamber (pump)	0.22 ^{1/}
P2	Meamber (pump)	1.00

^{1/} Plus undefined riparian rights

Figure 15f



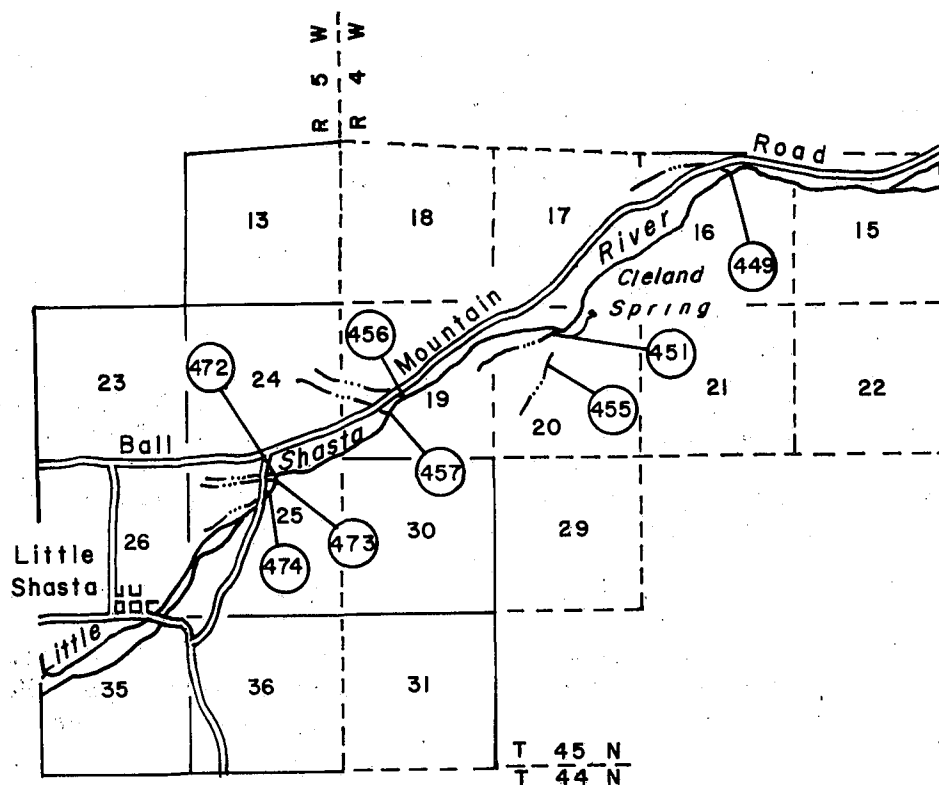
DIVERSIONS FROM LOWER SHASTA RIVER, SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 77

DIVERSIONS FROM LITTLE SHASTA RIVER

<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
449	Harp Ditch	1.60
451	Terwilliger Ditch	1.12
455	Martin Ditch	6.00
456	Dimmick Ditch	0.12
457	S & T Ditch	6.60
472	M & L Ditch	19.60
473	BMS Ditch	7.19
474	HHP Ditch	10.00

Figure 15g



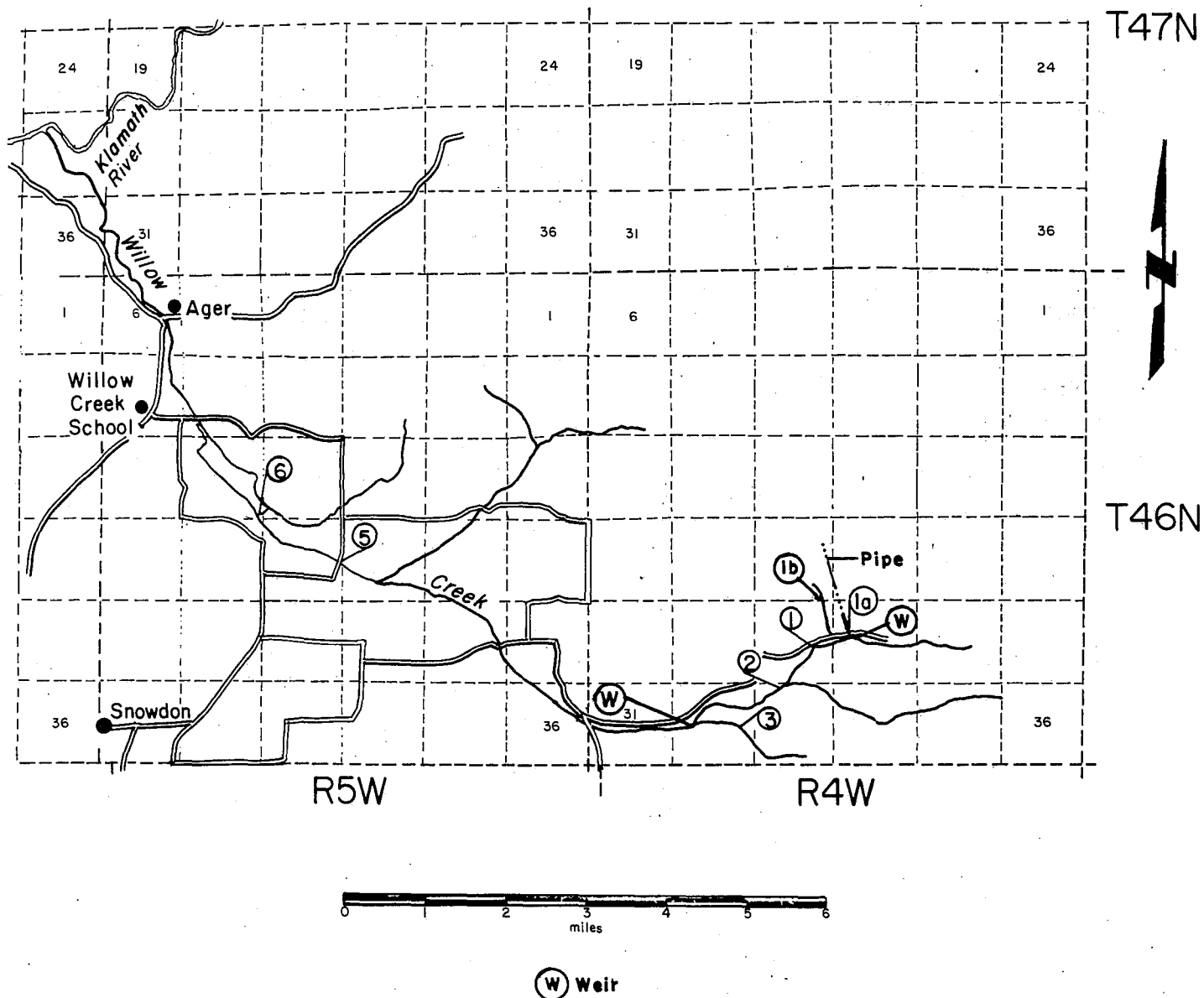
DIVERSIONS FROM LITTLE SHASTA RIVER,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 78

DIVERSIONS FROM WILLOW CREEK

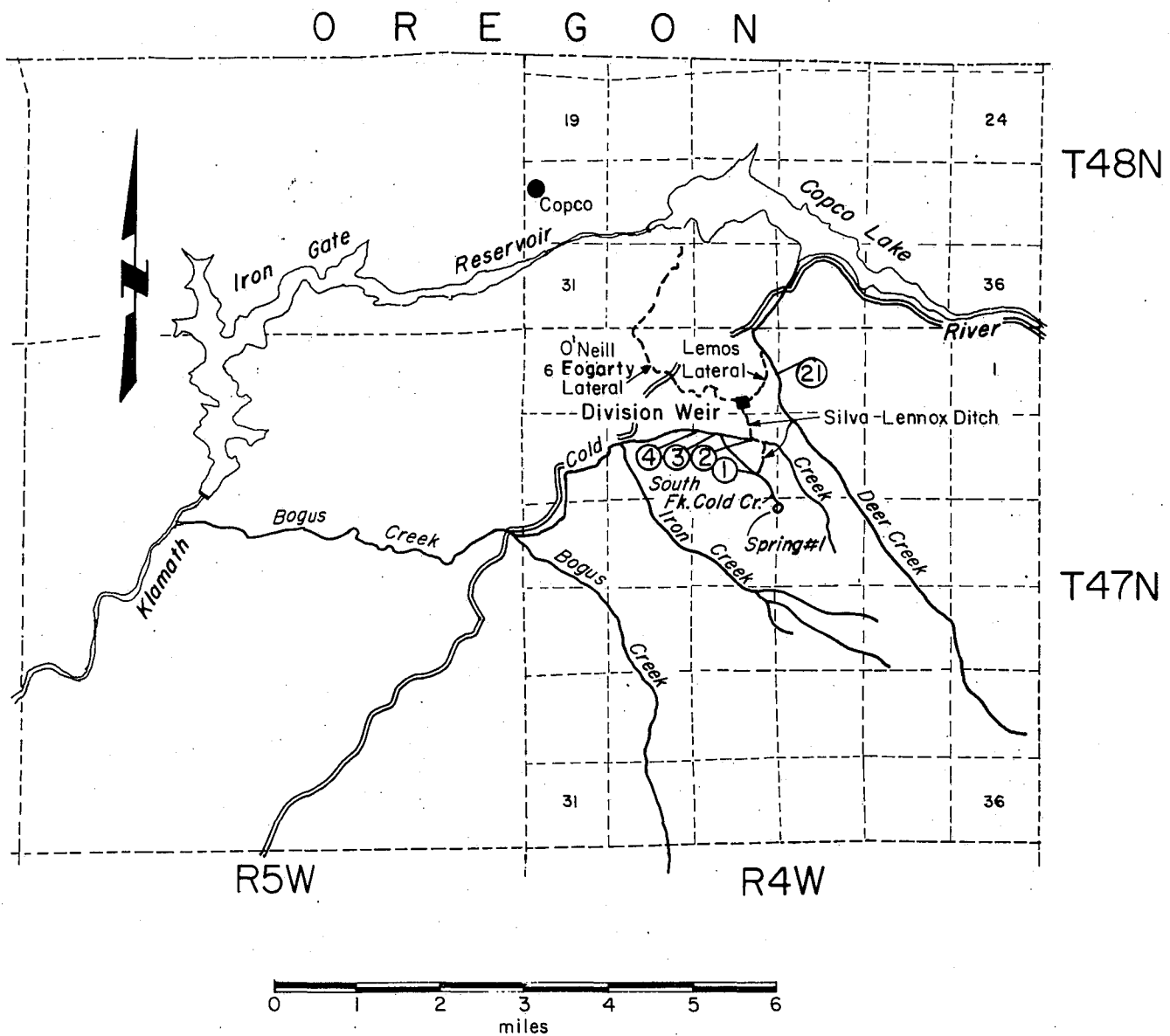
<u>Division Number</u>	<u>Name</u>	
1a	Guardia Pipe	1/6 of flow in Willow Creek above Guardia Pipe.
1b	Thomason Ditch	
1	Sylva Upper Ditch	1/6 of flow in Willow Creek above Guardia Pipe.
2	Sylva Lower Ditch	
3	Sylva South Fork Ditch	All of South Fork Willow Creek.
5	Cook Upper Ditch	2/3 of the flow in Willow Creek above Guardia Pipe. Measured at Sylva's west line.
6	Cook Lower Ditch	

Figure 15h



DIVERSIONS FROM WILLOW CREEK, SHASTA RIVER WATERMASTER SERVICE AREA

Figure 15i



DIVERSIONS FROM COLD CREEK,
SHASTA RIVER WATERMASTER SERVICE AREA

SURPRISE VALLEY WATERMASTER SERVICE AREA

The Surprise Valley service area is in Modoc County, east of the Warner Mountains. Figure 16, page 177, shows the service area, the streams serving it, and the towns and roads of the valley.

Ten individual stream systems rising on the eastern slope of the Warner Mountains supply water to the area. These are fed by snowmelt runoff and run in fast, steep courses down the eastern slope of the Warner Mountains to the valley floor where numerous scattered diversion ditches convey water to the irrigated lands.

Basis of Service

The Surprise Valley watermaster service area was created January 10, 1939 and includes Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, and Emerson Creeks, all of which once had individual watermaster service. Service was started on Eagle Creek at that time. Bidwell Creek was added to the service area March 16, 1960. Each of the ten stream systems is under separate decrees. See Table 79, page 176, for specific data regarding the decrees and water rights on the individual creeks.

Water Supply

The water supply comes almost entirely from snowmelt, with only minor spring-fed flows occurring late in the season. Due to the steep eastern slope of the Warner Mountains, there are no likely storage sites on the service-area streams. Because of the lack of such regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. Wide daily temperature changes cause great changes in the rate of snowmelt runoff. This situation is worsened by the relatively short, steep drainage area. Also, occasional summer thundershowers may cause a creek to discharge a flow of mammoth proportions for several hours. These flashes can cause considerable damage from washouts and debris deposition but are of such short duration that little or no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 91 through 102, pages 200 through 205.

Method of Distribution

Continuous-flow distribution is used on most creeks, but water is rotated among some users in accordance with either decree schedule or by mutual agreement.

Alfalfa and meadow hay, the major crops in the valley, are irrigated by sprinklers and wild flooding, although some lands depend upon subsurface irrigation. A few of these systems work by gravity, but most use pumps with the surface water supplemented by deep wells. Many additional acres have been put into production during the past few years through the use of deep wells. Only surface water supplies are under State watermaster service.

To facilitate distribution of irrigation water, construction of permanent diversion dams, headgates, and measuring devices has been stressed in recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they do help a lot in solving water measurement and distribution problems. The individual streams and locations of the diversions are shown in Figures 16 through 16k, pages 177 through 199.

Although the Owl Creek Flood Control and Water Conservation District did not become official until August 7, 1961, the District's diversion and distribution project was completed in February 1961. The project reduced the number of diversions from 17 to 2 and the number of ditches from 17 to 8. This makes distribution easier and fairer. The users say that they received twice as much water as they did before the project. It is possible to divert and distribute 80 cfs in the lower seven ditches.

1983 Distribution

Watermaster service began in the Surprise Valley area on March 19 and continued until September 30, with Keith Dick, Water Resources Technician II, as watermaster.

Bidwell Creek

Total stream runoff available from April 1 through September 30 was 22,060 acre-feet. Flooding in May and June damaged every diversion point on this stream. Due to a good supply of water, schedule 4 became effective about August 15. Flows continued and never got below first priority during the watermaster season.

Mill Creek

Total stream runoff available from April 1 through September 30 was 6,639 acre-feet. An undetermined amount of water reached upper lake during the last part of June and the first part of July. Peak flow reached 92 cfs which was more than could be used by all users. Season ended with 2.2 cfs.

Soldier Creek

Total stream runoff available March 19 through September 30 was 4,613 acre-feet. Peak flow during the last 2 weeks of May was estimated due to rocks filling control. During May and June rotation discontinued and was split to all users with some water reaching upper lake. Season ended with 2.2 cfs.

Pine Creek

Total stream runoff available on March 20 through September 30 was 2,792 acre-feet. Flows reached 38 cfs on May 23 and rotation discontinued and water split to all users for about 2 weeks. Flow ended July 23 and was dry for the rest of the season.

Cedar Creek

Total runoff available April 1 through September 30 was 4,370 acre-feet. Excess water reached Middle Lake during June for about 2 weeks, with all users getting all they could use. July 1 had 5 cfs which filled first priority and September 30 ended with an estimated 0.5 cfs.

Deep Creek

Total stream runoff from April 1 through September 30 was 4,220 acre feet. Excess water reached Middle Lake during June for about 2 weeks; users were trying to dry fields for making hay. South Deep was 0.5 cfs and North Deep was 0.4 on September 30.

Owl Creek

The recording station was operated by Red Bluff during this season. High flows in May and June carried a lot of gravel, which filled measuring devices, which needed cleaning a number of times. Flow reached Middle Lake during June and July.

Cottonwood Creek

Flows from April 1 through September 30 could not all be recorded. Diversion dam washed out and bypassed recording station. Peak flow was estimated at 80 cfs about May 28. Water reached Middle Lake during most of June, while users were trying to dry hay fields. Users decided to withdraw requests to drop watermaster service.

Rader Creek

Flows were not recorded this season because water washed around the end of the dam below recorder. Repairs were not completed by the season's end. Rock and gravel covered diversion structure for the lower users. Water reached Middle Lake during most of June and was divided by moving rocks at diversion point.

Eagle Creek

Total stream runoff, April 1 through September 30, was 3,600 acre-feet. June flood damage was considerable to all diversion points, with many still unrepaired by September 30. Water reached the lake most of June and July due to drying of hay fields.

Emerson Creek

Total runoff, April 1 through September 30, was 6,650 acre-feet. Flood water of May and June damaged all diversion points. Water was divided by moving rock-and-gravel debris at most diversion points.

TABLE 79

DECREES AND RELATED DATA - SURPRISE VALLEY STREAMS

Stream	Modoc County Superior Court Decree			Service Area Created	No. of Water Right Owners	Total	Remarks
	No.	Date	Type ^{a/}				
Bidwell	6420	1-13-60	S	3-16-60 ^{b/}	46	63.74	(Schedule 3) 3 priorities March 15-July 19. (Schedule 4) 5 priorities July 10-September 30. If no water passing Diversion No. 23 September 30-March 14, 1st priority provisions of Schedule 4 apply.
Mill	3024	12-19-31	CR	12-30-31	38	37.13	One priority on Brown Creek, tributary to Rutherford Creek, 7 priorities on Rutherford Creek, tributary to Mill Creek, 1st and 2nd for year-round use, 3rd and 4th April through September.
Soldier	2045	11-28-28	CR	9-11-29	13 4 ^{c/}	33.50 4.37	Starting March 19 each year, lower users receive water for 4 13-day periods alternating with upper users who receive water for 4 10-day periods, ending June 19. 7 priorities during lower users periods, 8 during upper users periods and 12 for rest of the year. Appropriative License 1566, 1613, 1648, and 1850.
Pine	3391	12-07-36	CR	1-13-37	5 1 ^{c/}	d/ 0.08	One full rotation totalling 693 AF. Rotation continues until flow decreases to 4 cfs, then all water goes to Cal-Vada Ranch until flow decreases to 1.60 cfs, then all water goes to the R. Bordwell Ranch.
Cedar	1206 2343 d/	5-22-01 2-15-23	CA CA	9-11-29	12	28.90 ^{d/}	Water rights established by these two decrees and an agreement signed by all users. No. 1206 set 1st and 2nd priorities; No. 2443 3rd priority and agreement the 4th. 28.90 cfs includes 5.00 cfs imported from Thoms Creek on west slope of Warner Mountains.
Deep	3101	1-25-34	CR	12-29-34	11	29.37	Schedule 2 establishes 5 priorities, year-round.
Cottonwood	6903	12-01-64	CA	7-01-77 ^{b/}	8	d/	Water rights based on a percentage of flow in an equal priority.
Owl	2410	5-29-29	CA	9-11-29	8	41.70	21 priorities; all year round but 8th priority, under which each of 3 owners receives his allotment for an 8-day period. Appropriative License No.2842, 3.54 cfs.
Rader	3626	6-04-37	CR	6-12-37	6	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6, and 7 have seasonal limitations.
Eagle	2304 3284	4-05-26 11-05-37	CA CR	1-10-39	36	30.57	Decree No. 3284 added rights in all priority classes, and established 4 classes. 4.50 cfs right of Bedford Corp. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 16 to October 14 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVIII & XVIII, for use April 15 to October 1.
Emerson	2840	3-25-30	CR	4-11-30	10	24.65	4 priorities, 1st is for year-round use, others April 1 to September 30.

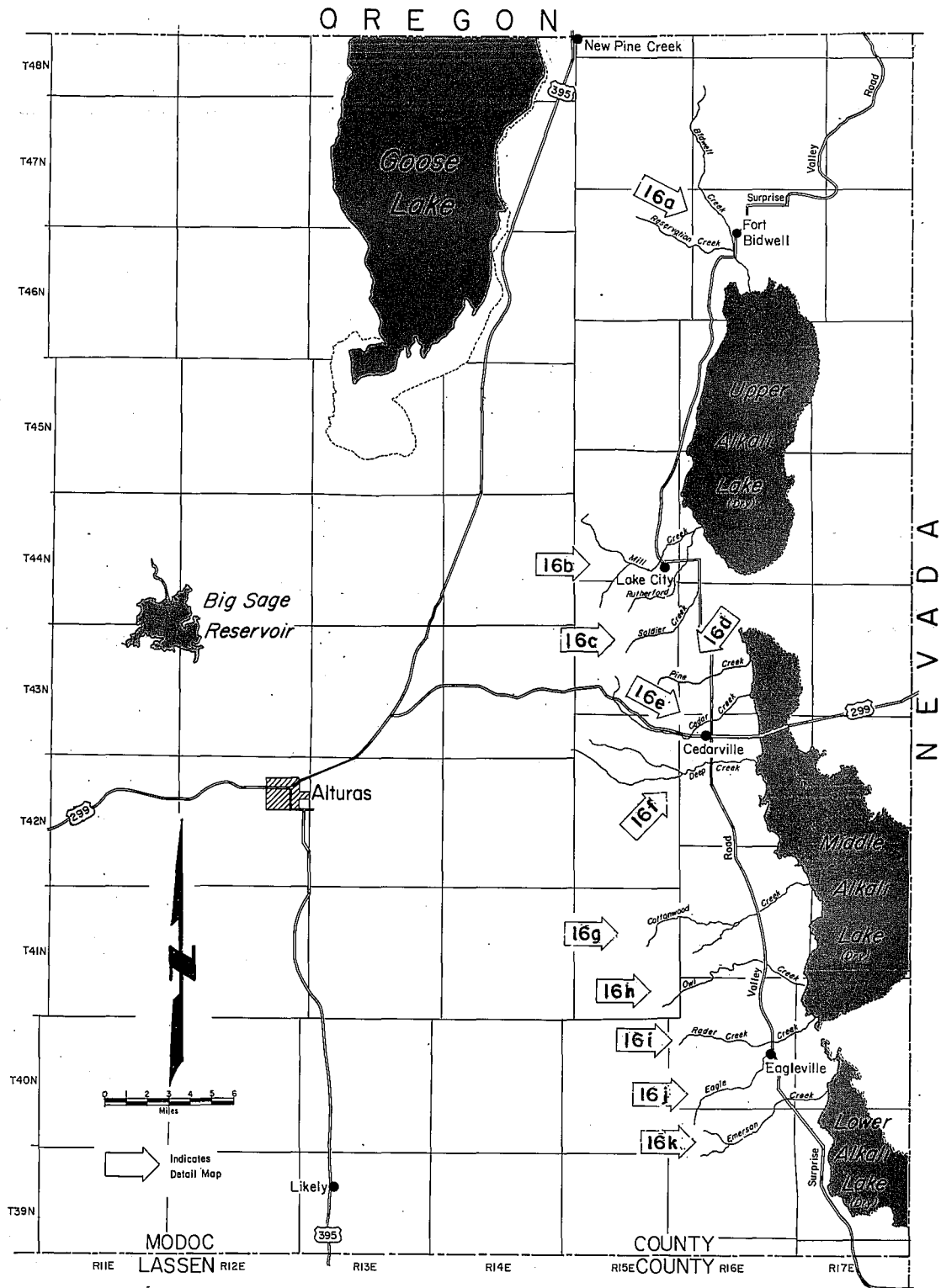
^{a/} S-Statutory, CR-Court Reference, CA-Court Adjudication.

^{b/} Added to existing Surprise Valley service area.

^{c/} Appropriative rights junior to the decreed rights.

^{d/} See remarks.

Figure 16



INDEX MAP SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 80

DIVERSIONS FROM BIDWELL CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>March 15 to July 9 cfs</u>	<u>July 10 to Sept 30 cfs</u>
4	Lassen P.C.A.	4.71	4.7111
5	Peterson	0.38	0.35
	Bucher	0.45	0.35
	Moore	0.07	0.07
6	Anderson	0.18	0.18
	Moore		
	Morrision		
7	Peterson	0.50	0.40 ^{1/}
8	Lassen P.C.A.	7.25	7.25
	Town Users	0.05	0.05
9	McAuliffe	7.63	7.63
	Town Users	0.22	0.17
10	Carey	6.13	6.13
	Bucher	0.70	0.70 ^{2/}
	Peterson	0.44	0.44
	Town Users	0.26	0.26
11	Bucher	0.38	1 [/]
12	U. S. Indian Service	0.46	0.20 ^{3/}
	Town Users	0.26	0.26
13	Fee Ranch Inc.	5.24	5.24
	Town Users	0.44	0.44
15	Fee Ranch Inc.	8.94	8.94
	Sagehorn	4.94	4.94 ^{2/}
	Sagehorn	2.88	2.88 ^{2/}
	Toney	0.42	0.42 ^{2/}
	Town Users	0.03	0.03
17	Kober	0.05	0.05
19	Cockrells Inc.	4.26	4.26
20	Sagehorn	1.10	1.10
	Carey	0.95	0.95 ^{2/}
21	Sagehorn	1.39	1.39
	Carey	0.48	0.48
22	O'Callaghan	0.38	0.38
23	Sagehorn	1.79	1.79
XX	Sagehorn	4 [/]	4 [/]

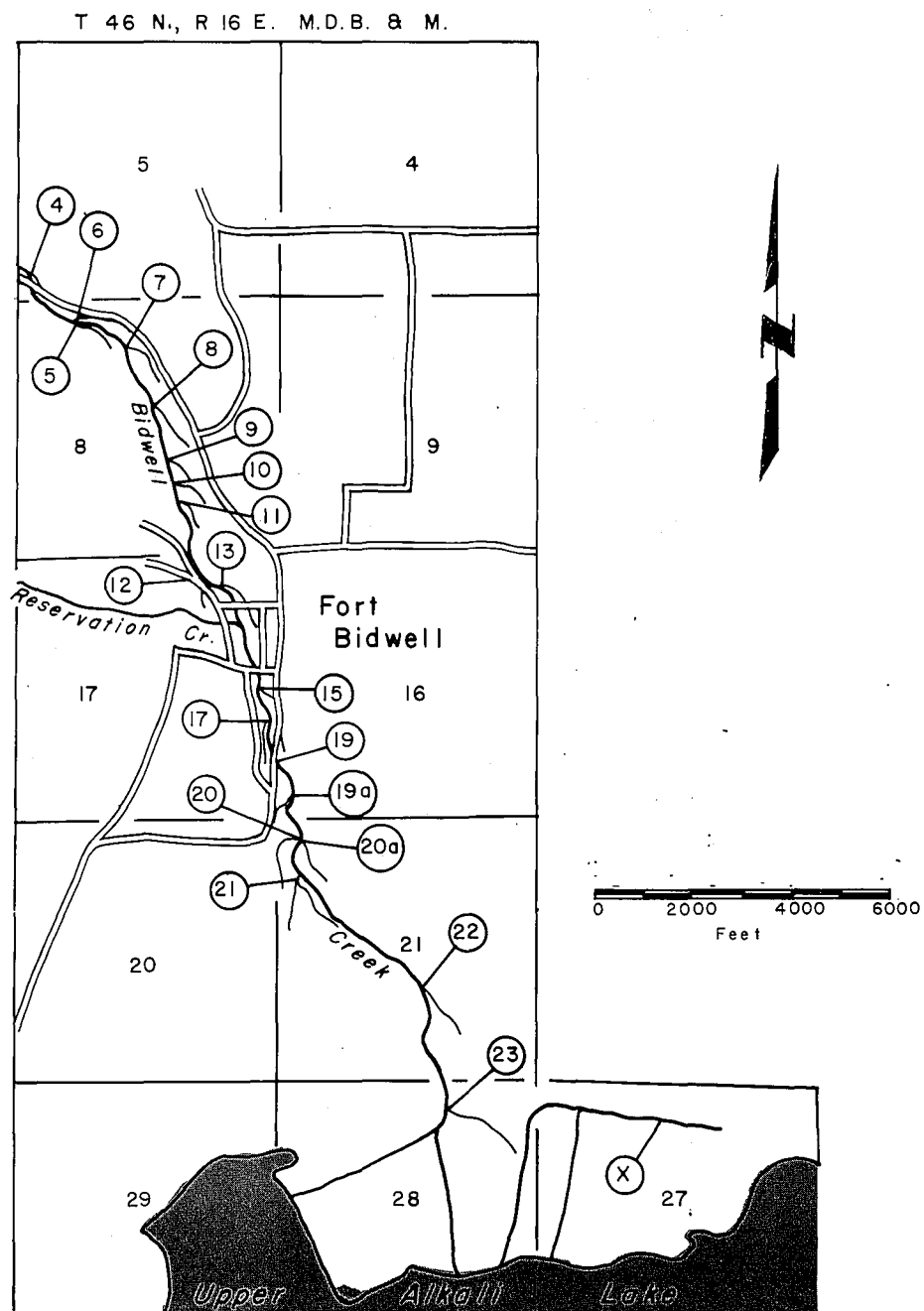
1/ Two 36-hour periods of 2.00 cfs.

2/ Includes 0.10 cfs stockwater right not to be diverted from creek.

3/ Reservation Creek - U. S. Indian Service entire flow.

4/ If flow is less than 3.82 cfs, deficiency is made up by additional diversions through Diversion 15 if Fee Ranch Inc. allotment is satisfied.

Figure 16a



DIVERSIONS FROM BIDWELL CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA

TABLE 81

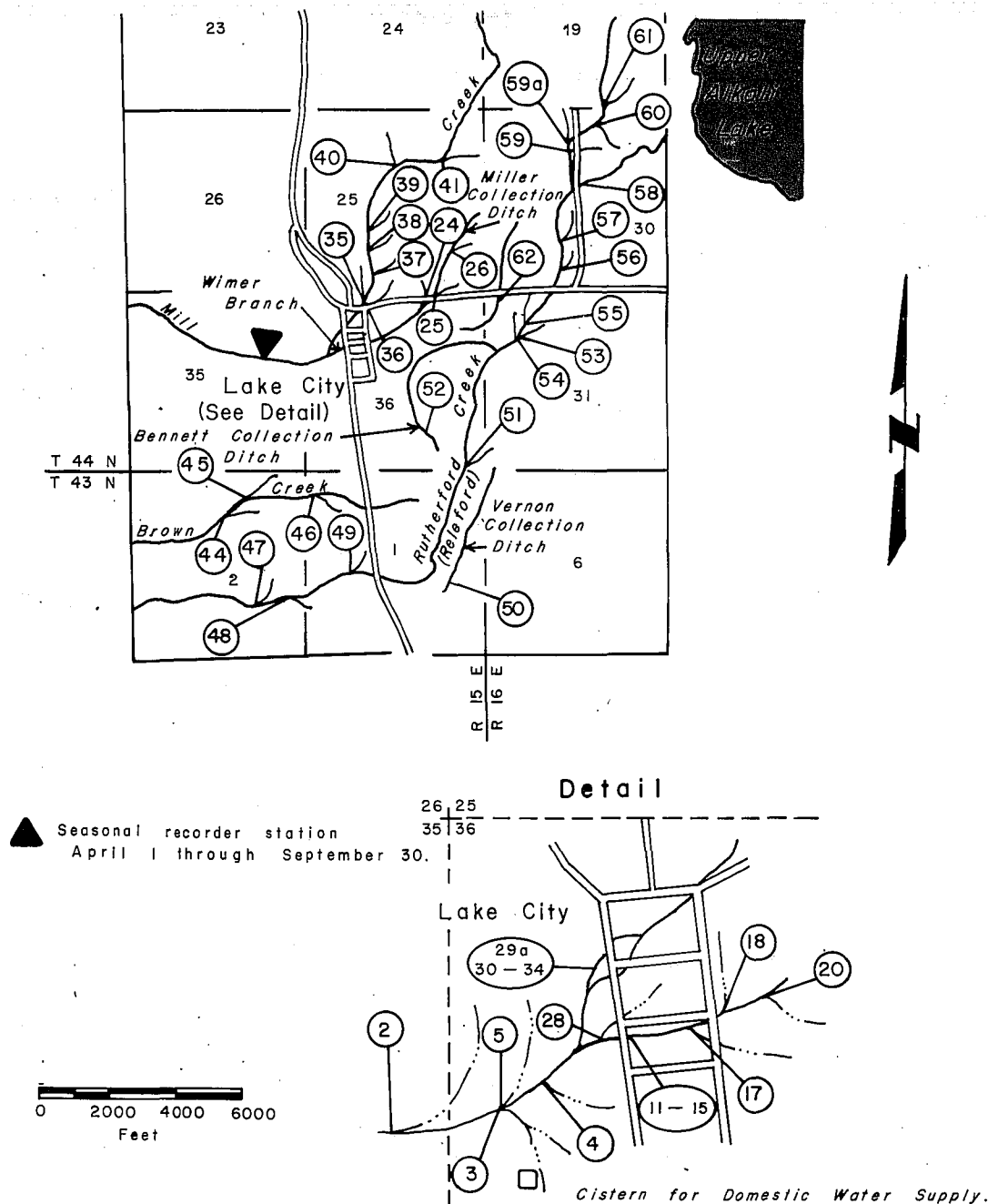
DIVERIONS FROM MILL CREEK, BROWN CREEK, AND
RUTHERFORD (RELEFORD) CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
2	Dixon	0.38
	Smith	0.24
3	Bettendorff	1.36
	McDaniels	0.13
	Domestic Users	0.06
4	Dyer	0.07
	Fogerty	0.25
	George	0.26
5	Dixon	0.18
11-13,15,28	Town Users	1.92
17	Bettendorff	2.01
18	Town Users	0.33
20	Wimer	1.85
24	Dunten & Dunten Ranch, Inc.	1.45
26	Darst	1.85
29A,30-34	Town Users	1.63
Channel	Cockrells Inc.	10.30
Channel	Huntsman	1.85
44-46	Gorzell	0.80
47	Page	0.01
	Gorzell	0.575
	Gorzell	0.275
	Bettendorff	0.30
48	Hedgpeth	0.60
48-49	Page	1.65
54	Cockrells Inc.	0.40
55-57	Cockrells Inc.	0.75 ^{1/}
58	Cockrells Inc.	0.10 ^{1/}
58-59	Jorgenson	0.90 ^{1/}
59A	Cockrells Inc.	0.35 ^{1/}
61	Huntsman	0.65
<u>2/</u>	<u>Cockrells Inc.</u>	<u>0.70</u>

1/ Water from Hays Collecting Ditch is deducted from decreed amount of direct diversion from Rutherford Creek.

2/ Channel of Rutherford Creek.

Figure 16b



**DIVERSIONS FROM MILL CREEK, BROWN CREEK,
AND RUTHERFORD (Releford) CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

TABLE 82

DIVERSIONS FROM SOLDIER CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>Decreed Right cfs</u>	<u>Appropriative Right cfs</u>
1	Pratt et al	4.80	
	Powers	3.70	
	Overholtzer	1.45	0.87
1 &/or 2	Page	1.06	1.75
3	Carter	2.05	
	Lake	0.05	
4	Hironymous	4.30	
5	Eaton	2.20	1.25
11	Stopp	0.30	
15	White	7.14 ^{1/}	
16	Harris	1.03	
	Bullen	1.24	
17	White	0.73	
19	Cockrells, Inc.	2.04 ^{2/}	
26	Cockrells, Inc.	2.25	

1/ Includes 2.81 cfs allotted to Diversion No. 13 which now diverts at Diversion No. 15.

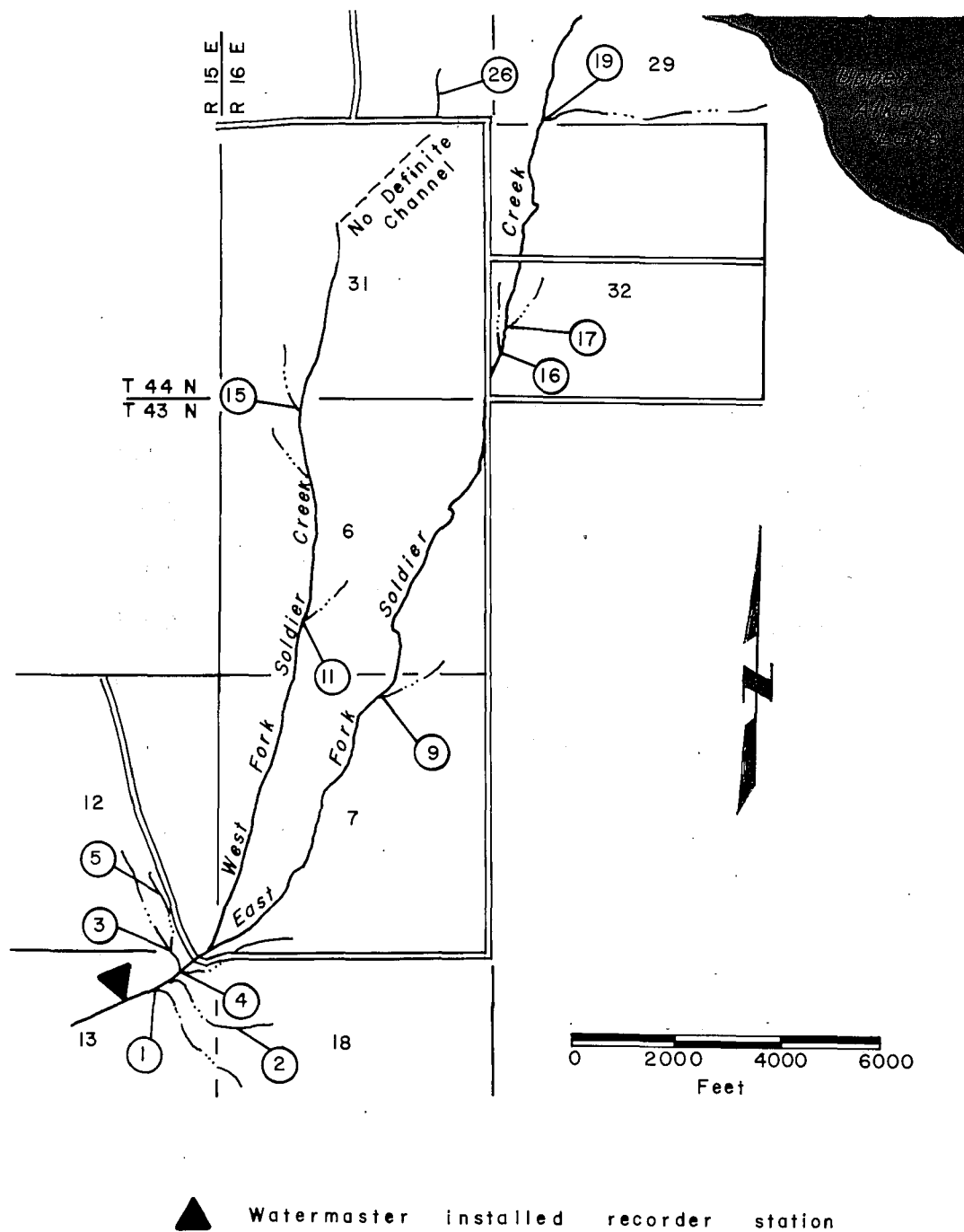
2/ Plus any surplus flow that can be used beneficially.

Diversions 1 through 5 are upper users.

Diversions 11 through 26 are lower users.

All decreed rights must be satisfied before the appropriative right may be exercised.

Figure 16c

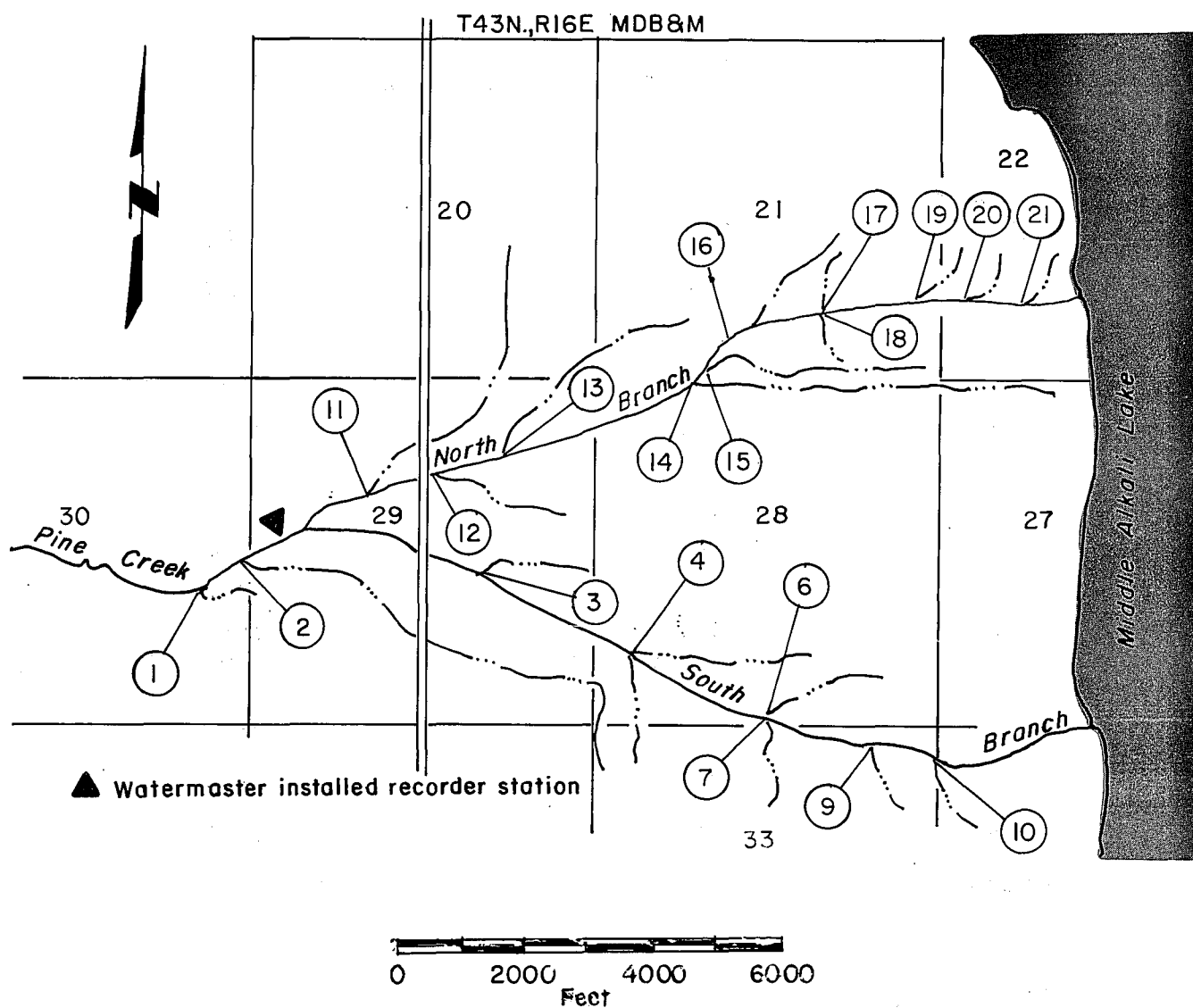


**DIVERSIONS FROM SOLDIER CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

TABLE 83
DIVERSIONS FROM PINE CREEK

<u>Rotation Allotments</u>	<u>Name</u>	<u>ac-ft</u>
1,11,13-21	Johnson	186.2
	Coops	3.0
	Schohr and Walgenbach	156.3
3,14	Schohr and Walgenbach	60.0
3,6-10	Hill	206.6
2.4	Bordwell	78.4
12	Hill	2.5

Total of first and second rotation is 603 acre-feet.



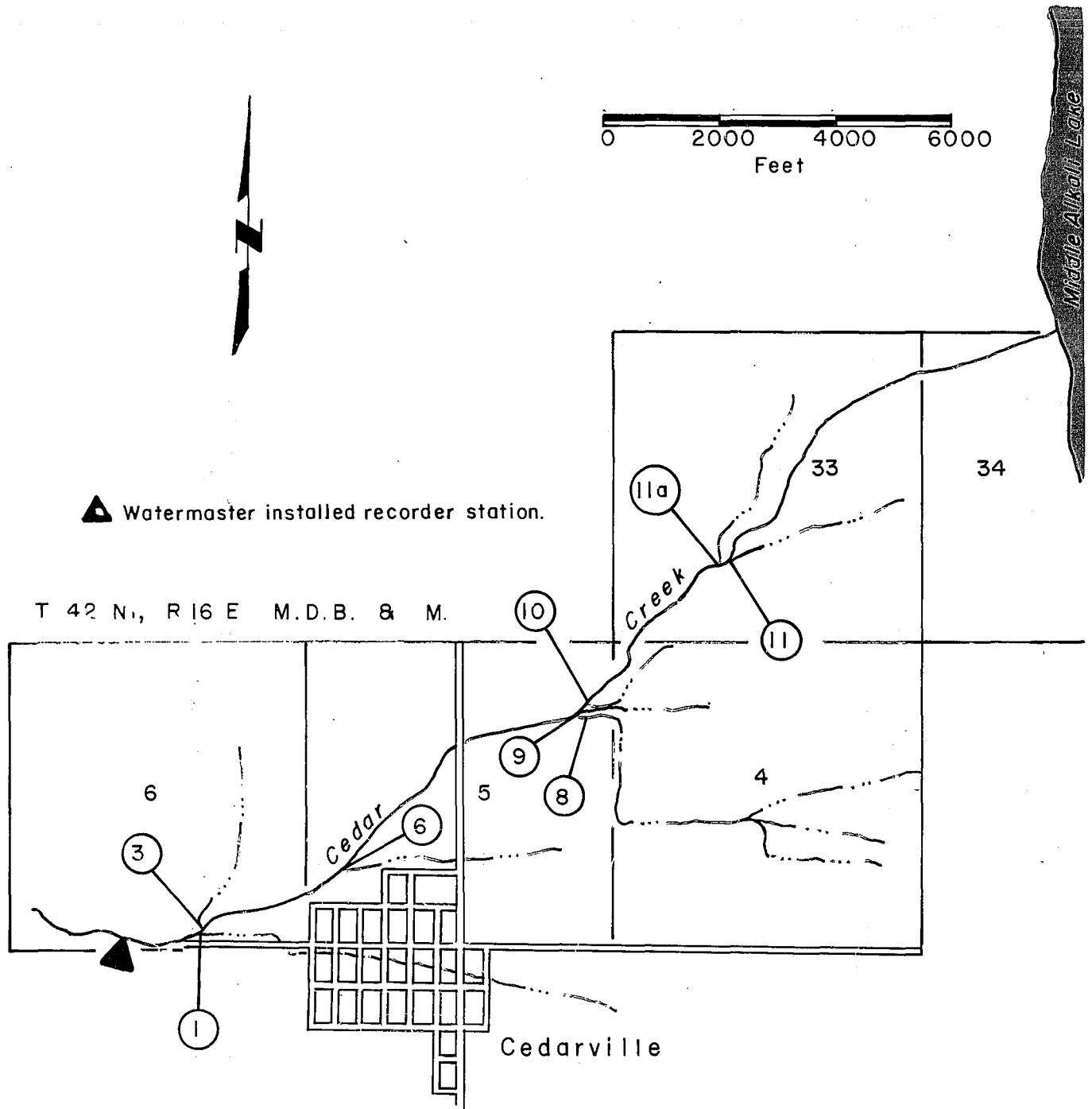
DIVERSIONS FROM PINE CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA

TABLE 84
DIVERSIONS FROM CEDAR CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Weber	5.00
3	Hill	2.65
	Laxague	0.50
6	Wylie	5.95
	Pratt	
8	Bunyard	2.30
	Kemble	1.40
	Ferguson	0.80
9	Sharrow	0.42
	Sharrow	1.08
10	Hutchens	2.60
11,11a	Ash	4.00
Channel	Areche	1.10
Channel	Hill	1.10

NOTE: The total 28.90 cfs includes
5.00 cfs imported from Thoms Creek.

Figure 16e



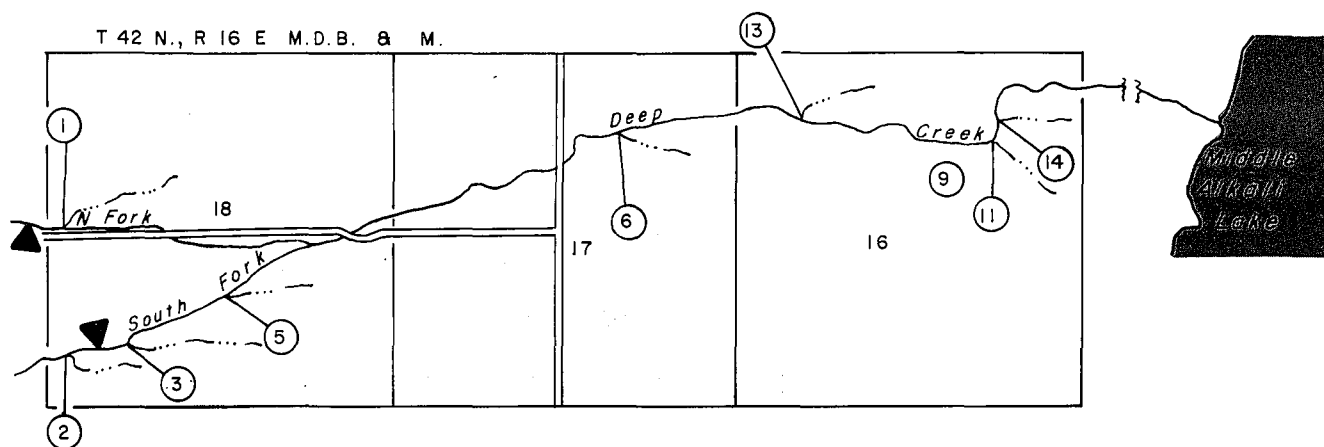
DIVERSIONS FROM CEDAR CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA

TABLE 85
DIVERSIONS FROM DEEP CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Hicks	0.10
	Cain	0.16
	Hussa	6.01
	Rosendahl	2.03
	Gooch	0.34
	Page	0.16
2	Laxague	0.65
3	Rosendahl	1.14
4	Queirolo	3.30
	Federal Home Administration	3.33
5	Houser	1.00
6	Rosendahl	0.40
9	Federal Home Administration	4.30
	Queirolo	1.00
<u>111/</u>	Laxague	1.05
13	Rosendahl	0.80
	Hussa	2.75
14	Bordwell	0.85

1/ May also be used in diversion 2.

Figure 16f



▲ Seasonal recorder (April 1 thru September 30)

0 2000 4000 6000
Feet

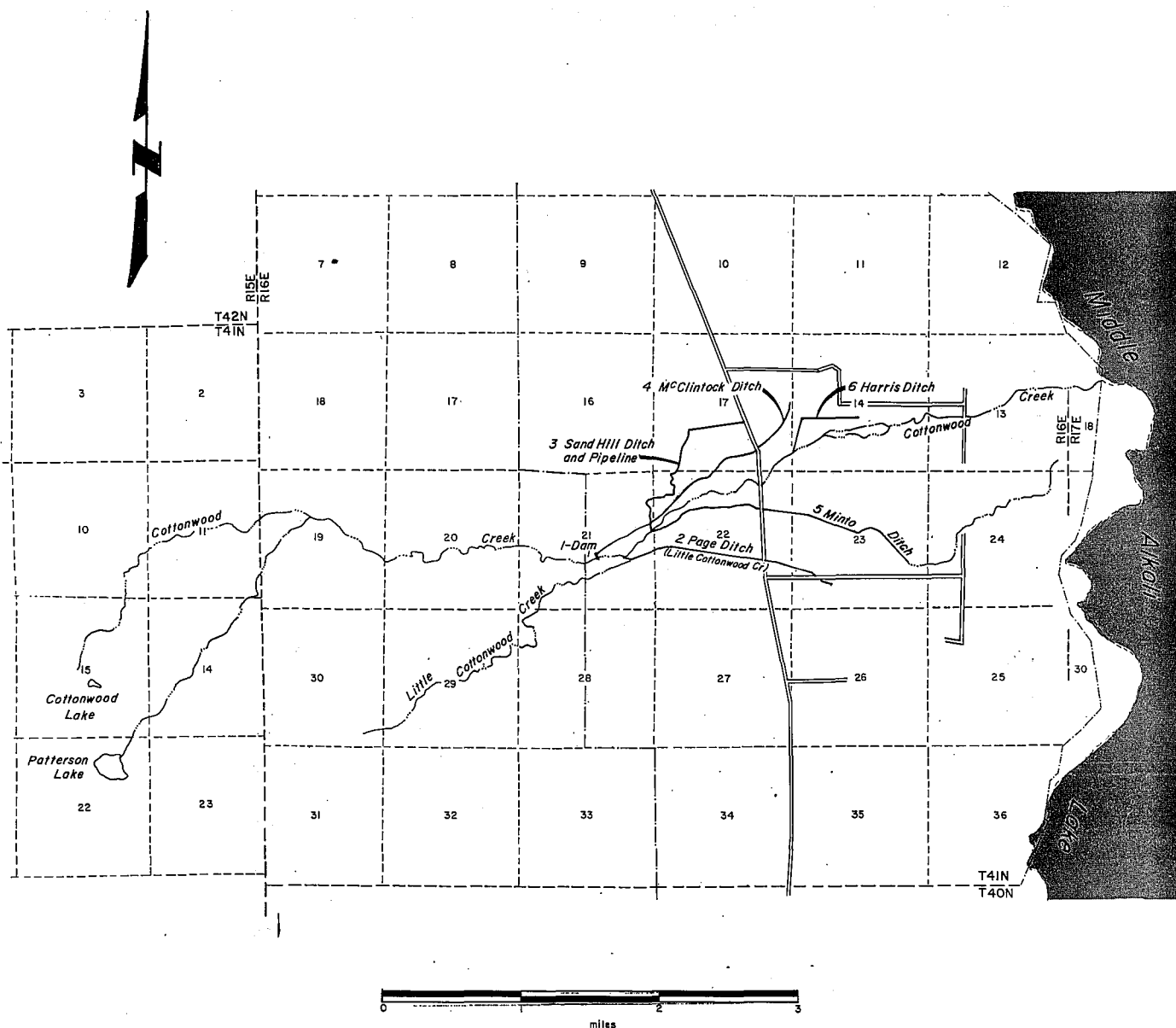
DIVERSIONS FROM DEEP CREEK, SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 86
DIVERSIONS FROM COTTONWOOD CREEK

<u>Decreed Owner</u>	<u>Percentage of Water</u>
Carroll, R.	0.54
Stevenson, J.	6.00
Cockrell, W.	18.04
Cockrell, W.	5.58
Cockrell, Al, Cattle Co.	47.55
Cope	4.18
Goodwin, D.	12.53
Cockrell, W.	<u>5.58</u>
	100.00 ^{1/}

^{1/} During 1980 the water rights
were used on a rotation
schedule agreed to by the owners.

Figure 16g

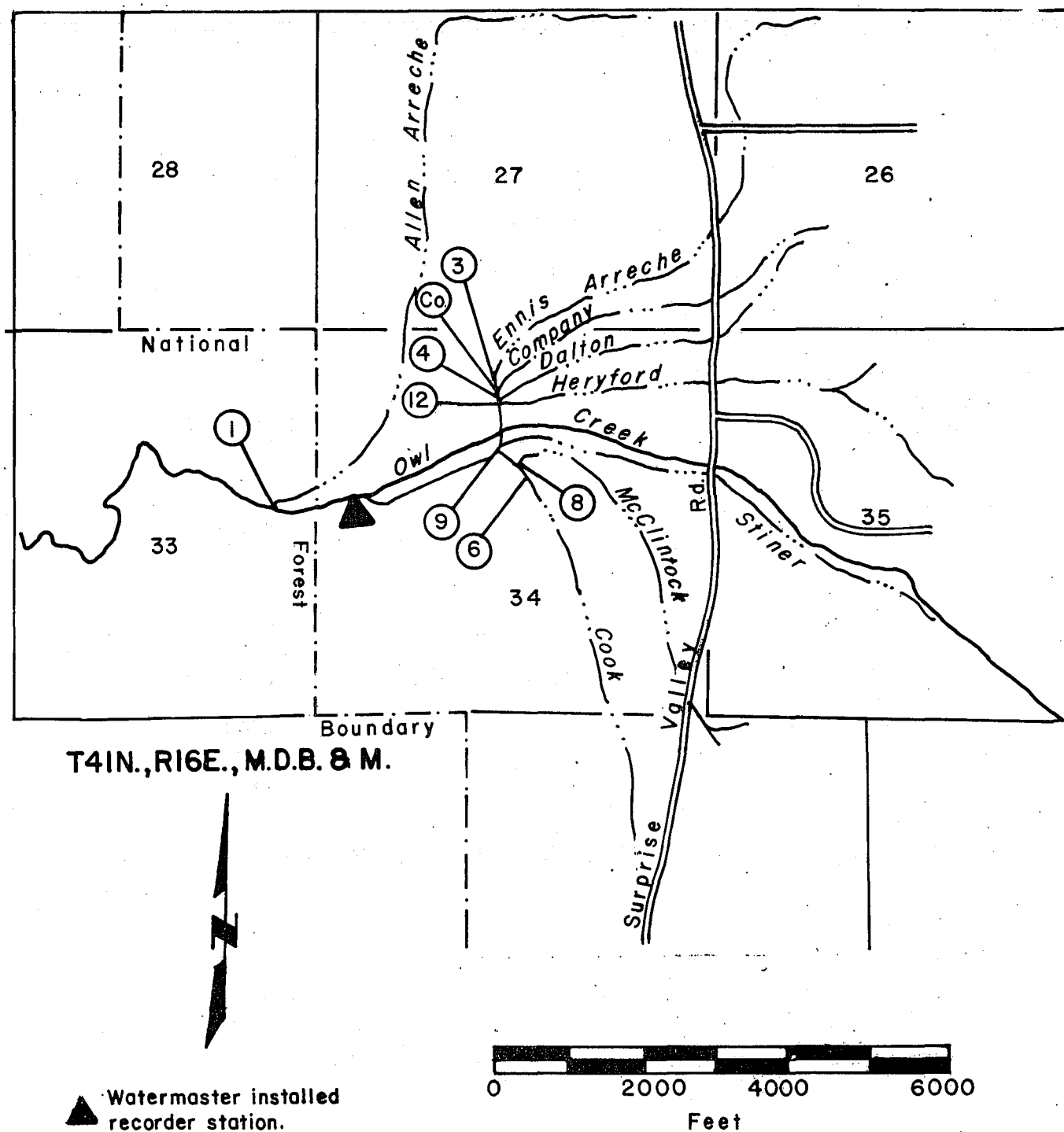


DIVERSIONS FROM COTTONWOOD CREEK, SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 87
DIVERSIONS FROM OWL CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Cockrell Stevenson	2.47 1.81
3	Davis Stevenson	1.16 2.25
4	Davis	3.14
Co.	Stevenson Stevenson Stanley	1.26 1.81 0.99
6,8	Cockrells Inc.	17.62
9	Berryessa	3.71
12	Berryessa	5.48

Figure 16h



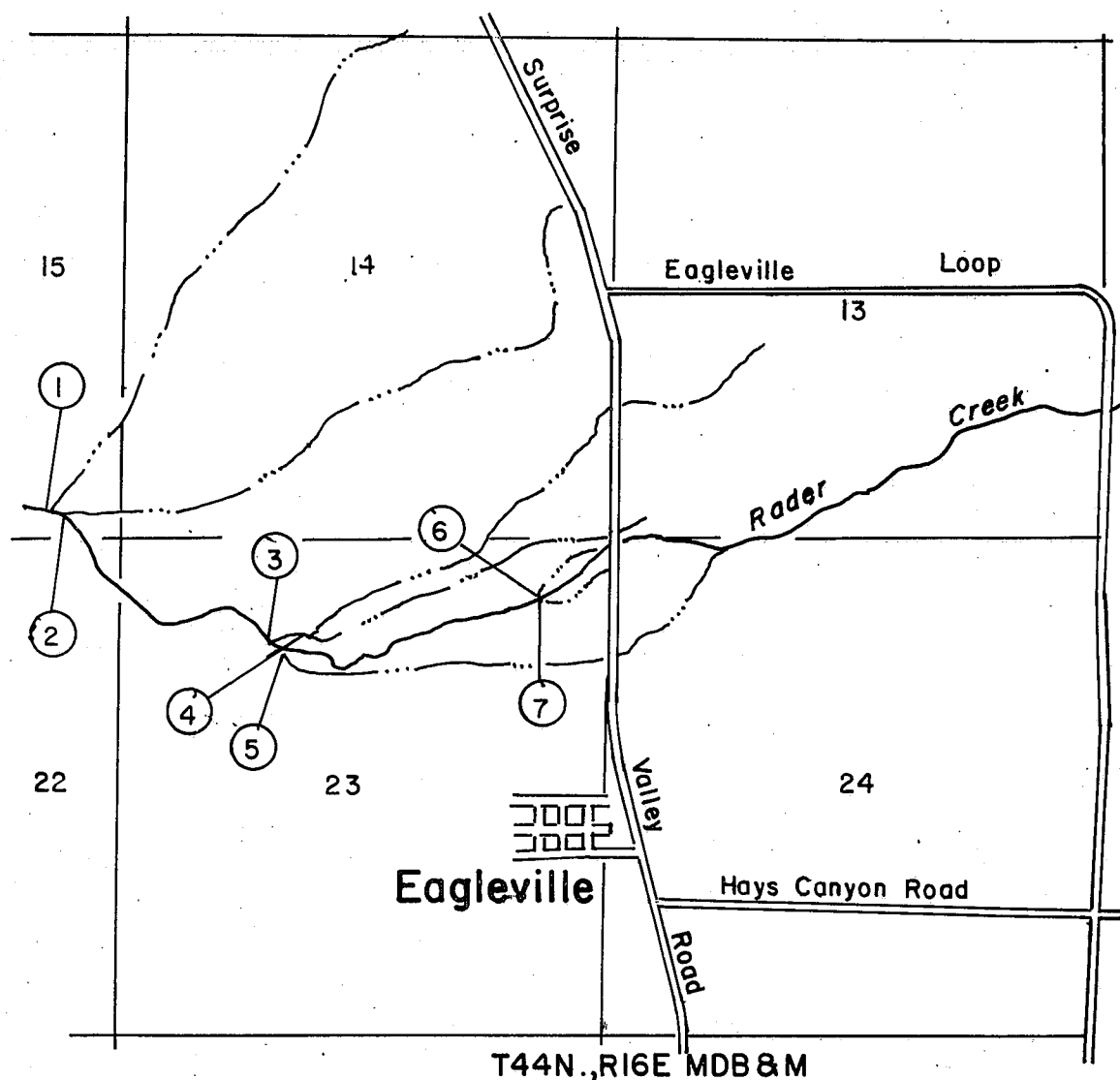
**DIVERSIONS FROM OWL CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

TABLE 88
DIVERSIONS FROM RADER CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Cockrell	<u>1/</u>
2	Lazy S. J. Ranch, Inc.	3.50
3	Minto Ranch, Inc.	2.39
4	White Pine Lumber Co.	9.60
5	White Pine Lumber Co.	2.35
6	Minnitte	0.08
7	Reeves	0.08

1/ 1/7th of total flow from May 20 until water will not reach place of use.

Figure 16i



**DIVERSIONS FROM RADER CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

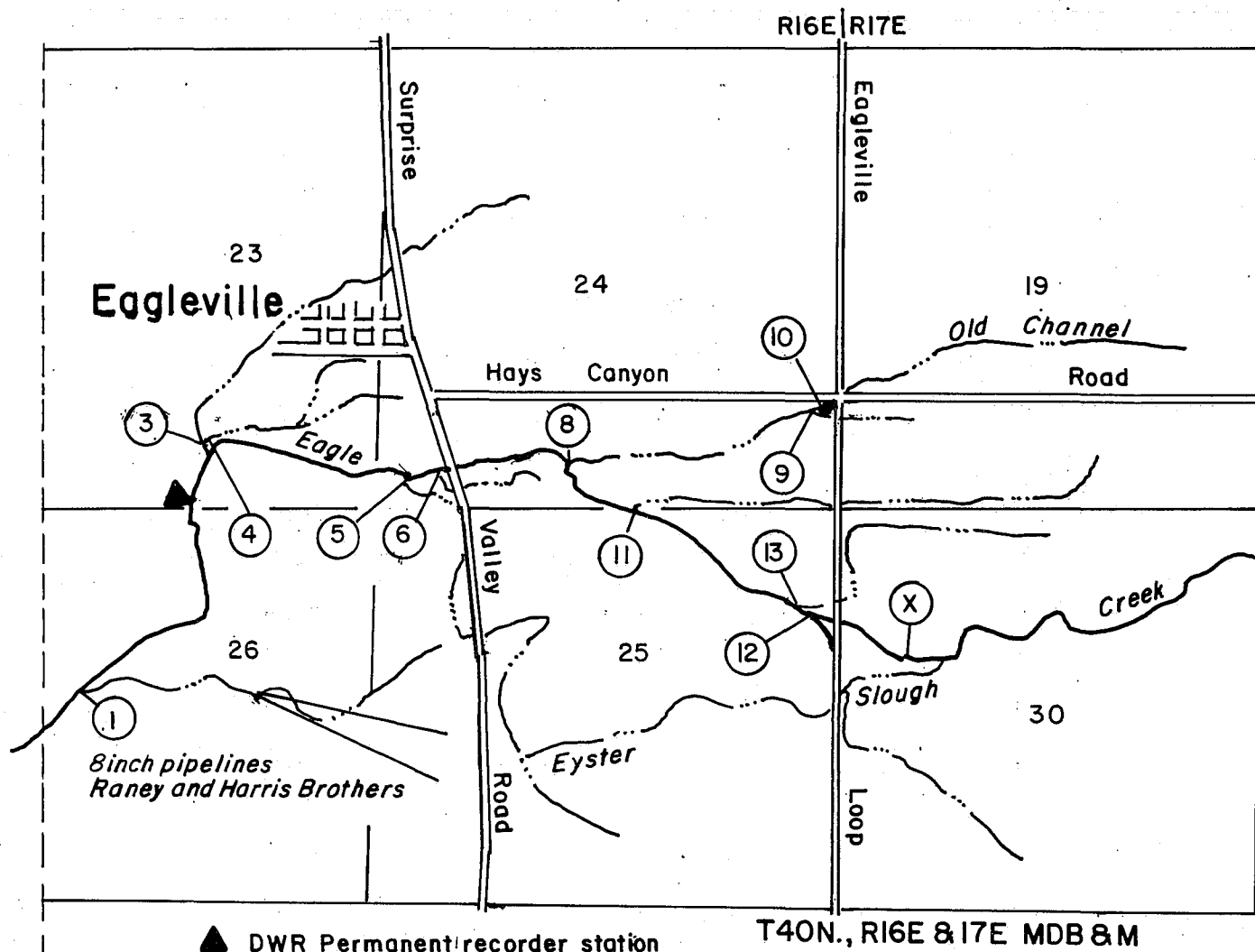
TABLE 89
DIVERSIONS FROM EAGLE CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Harris Brothers	0.41
	Morgan	0.36
	Raney	0.51
3	13 Town Users	0.98
	White Pine Lumber Co.	5.00
4	15 Town Users	1.36
	White Pine Lumber Co.	1.20
5	Harris Brothers	0.50
6,8	White Pine Lumber Co.	2.65
9	Lazy S. J. Ranch, Inc.	0.15
10	Four Star Cattle Co.	3.15 ^{1/}
11	White Pine Lumber Co.	0.55
	Lazy S. J. Ranch, Inc.	1.95
12	Grove	0.20
	Miura	1.20
13	Grove	2.70
X	Harris Brothers	6.70 ^{2/}

^{1/} Minus any water received from the Prior collection ditch.

^{2/} Any water over 0.70 cfs from Eyster Slough
must be deducted from this.

Figure 16j



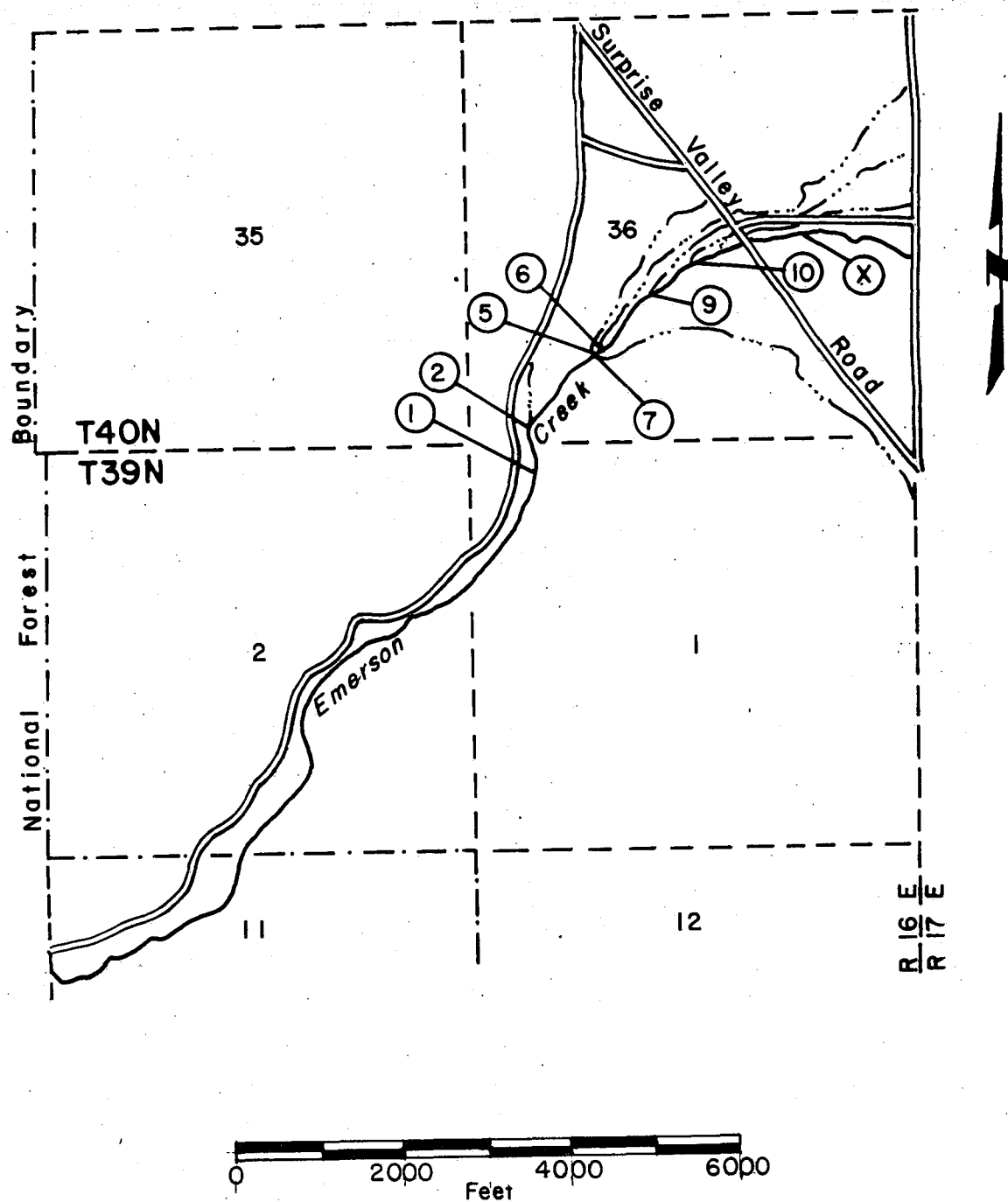
DIVERSIONS FROM EAGLE CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA

TABLE 90
DIVERSIONS FROM EMERSON CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Espil Sheep Co.	0.21
2	Harris Brothers	2.00
	Romagnoli	0.20
5	Bicondoa	3.30
6	Lazy S. J. Ranch, Inc.	0.60
	Miura	2.25
7	Berryessa	5.15
9	Warren	1.60
10	Espil Sheep Co.	3.89 ^{1/}
X - Channel	Grove	5.75

^{1/} Includes 1.79 cfs water right that was transferred from diversion number 1 to diversion number 10 in 1983.

Figure 16k



**DIVERSIONS FROM EMERSON CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 91

1983 Daily Mean Discharge
(In cubic feet per second)

BIDWELL CREEK NEAR FORT BIDWELL

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	16	28	37	209	82	15	9.6	1
2	19	33	38	172	76	16	9.4	2
3	20	28	42	181	66	17	9.1	3
4	23	25	52	177	57	17	8.8	4
5	22	23	54	178	53	16	8.6	5
6	19	22	47	191	49	15	8.1	6
7	19	22	42	200	46	15	7.8	7
8	19	25	43	239	44	15	7.9	8
9	21	27	37	256	41	14	7.9	9
10	28	25	32	257	38	14	7.7	10
11	36	23	30	231	36	14	7.4	11
12	34	21	33	201	34	13	7.3	12
13	60	19	38	177	35	13	7.0	13
14	51	18	42	164	39	13	6.9	14
15	39	19	47	158	39	13	6.9	15
16	32	21	50	152	34	12	6.7	16
17	28	26	54	154	33	11	6.6	17
18	25	33	66	150	30	11	6.6	18
19	22	40	95	139	29	17	6.7	19
20	20	42	117	128	30	14	6.7	20
21	19	54	138	120	28	14	6.6	21
22	19	61	157	113	27	14	7.1	22
23	17	55	231	108	27	13	7.5	23
24	16	45	279	104	27	12	7.1	24
25	15	38	241	98	28	11	6.8	25
26	15	33	218	94	29	10	6.6	26
27	14	29	236	90	29	10	7.7	27
28	14	26	282	83	30	9.9	6.8	28
29	14	27	318	77	30	9.5	6.7	29
30	21	34	285	72	39	9.4	6.6	30
31	32		307		18	9.6		31
MEAN	24.2	30.7	119	155.8	38.8	13.1	7.4	MEAN
AC-FT	1490	1830	7320	9270	2390	810	440	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 92

1983 Daily Mean Discharge
(In cubic feet per second)

MILL CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		15	13	74	19	6.4	3.5	1
2		15	13	71	19	6.2	3.5	2
3		15	13	70	18	6.0	3.5	3
4		15	13	69	18	6.0	3.5	4
5		15	14	67	17	5.8	3.5	5
6		14	14	57	17	5.8	3.5	6
7		14	14	55	16	5.6	3.5	7
8		14	14	47	16	5.6	3.4	8
9		14	15	38	16	5.4	3.4	9
10		14	13	31	15	5.4	3.4	10
11		14	13	26	15	5.2	3.4	11
12		14	13	21	15	5.0	3.4	12
13		15	13	21	15	5.0	3.4	13
14		15	15	21	14	5.0	3.2	14
15		14	15	21	14	5.0	3.2	15
16		14	17	20	13	5.0	3.2	16
17		14	27	20	13	5.0	3.4	17
18		14	32	20	13	5.0	3.4	18
19		14	37	20	12	5.0	3.4	19
20		14	40	21	11	5.0	3.4	20
21		14	47	20	10	5.0	3.4	21
22		13	57	20	9.8	5.0	3.5	22
23		13	70	20	9.2	5.0	3.5	23
24		13	90	20	8.9	5.0	3.5	24
25		13	92	20	8.7	5.2	3.5	25
26		13	92*	20	8.7	5.4	3.5	26
27		12	90	19	8.4	4.6	3.5	27
28		12	90	19	8.0	3.9	3.5	28
29		13	90	19	7.1	3.5	3.5	29
30		13	90	19	6.9	3.5	3.5	30
31			86		6.7	3.5		31
MEAN		13.9	40.3	32.9	12.8	6.2	3.2	MEAN
AC-FT		825	2480	1960	790.2	380	204	AC-FT

*Peak 105 cfs @ 1,500.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 93

1983 Daily Mean Discharge
(In cubic feet per second)

SOLDIER CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		12	12	32	14	4.9	2.4	1
2		12	13	33	13	4.7	2.4	2
3		12	16	40	12	4.6	2.4	3
4		7.6	18	51	11	4.4	2.4	4
5		7.1	16	33	11	4.3	2.4	5
6		7.1	15	28	10	3.9	2.4	6
7		7.5	14	24	9.8	3.9	2.4	7
8		8.5	14	23	9.2	4.0	2.4	8
9		9.0	13	22	8.7	3.9	2.4	9
10		8.3	12	26	8.2	3.9	2.4	10
11		7.6	12	20	7.6	3.7	2.3	11
12		6.9	13	14	7.3	3.7	2.3	12
13		6.0	15	13	7.1	3.6	2.3	13
14		7.5	18	14	7.1	3.4	2.3	14
15		8.2	20	17	7.1	3.3	2.3	15
16		8.5	18	18	7.1	3.3	2.3	16
17		8.9	31	20	6.9	3.2	2.3	17
18		9.6	40	18	6.6	3.1	2.3	18
19	5.8	10	33	16	6.4	4.7	2.3	19
20	5.6	11	30	17	6.4	3.9	2.3	20
21	5.2	11	51	17	6.4	4.2	2.2	21
22	4.9	12	51	14	5.8	3.6	2.2	22
23	4.6	12	51	13	5.5	3.4	2.2	23
24	4.1	13	51	12	5.3	3.2	2.2	24
25	4.1	12	51	12	5.5	3.1	2.2	25
26	4.1	12	51	12	5.5	2.9	2.2	26
27	4.0	11	51	12	5.3	2.8	2.2	27
28	4.0	11	51	12	5.3	2.7	2.2	28
29	4.0	11	51	12	5.2	2.7	2.2	29
30	5.3	12	51	14	5.2	2.6	2.2	30
31	17		51		4.9	2.6		31
MEAN		9.7	30.1	20.3	7.6	3.6	2.2	MEAN
AC-FT	144	580	1850	1210	469	223	137	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 94

1983 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK AT DIVERSION OF NORTH AND SOUTH CHANNELS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		5.0	19	16	0.9	0	0	1
2		7.0	18	12	0.9	0	0	2
3		6.5	16	8.5	0.8	0	0	3
4		6.0	15	7.5	0.8	0	0	4
5		5.0	15	6.5	0.8	0	0	5
6		4.8	15	6.0	0.6	0	0	6
7		4.6	15	6.0	0.6	0	0	7
8		5.0	12	5.5	0.4	0	0	8
9		5.0	11	5.5	0.4	0	0	9
10		5.0	9.5	5.5	0.4	0	0	10
11		5.0	12	5.0	0.4	0	0	11
12		7.0	14	5.0	0.3	0	0	12
13		4.6	16	4.5	0.3	0	0	13
14		3.9	19	4.5	0.3	0	0	14
15		3.9	19	4.0	0.2	0	0	15
16		4.8	19	4.2	0.2	0	0	16
17		7.5	19	3.9	0.2	0	0	17
18		9.0	19	3.8	0.1	0	0	18
19		14	18	3.6	0.1	0	0	19
20	1.7	16	22	3.4	0.1	0	0	20
21	2.3	13	37	3.0	0.1	0	0	21
22	2.2	13	37	2.8	0.1	0	0	22
23	2.1	13	38	2.5	0	0	0	23
24	2.0	11	35	2.2	0	0	0	24
25	1.9	10	34	2.0	0	0	0	25
26	1.8	7.5	34	1.8	0	0	0	26
27	1.6	8.0	47	1.5	0	0	0	27
28	1.5	8.5	23	1.0	0	0	0	28
29	1.9	9.0	21	1.0	0	0	0	29
30	6.0	9.5	19	1.0	0	0	0	30
31	10.5		18		0	0	0	31
MEAN								MEAN
AC-FT	70.4	456	1320	277	1.8	0	0	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 95

1983 Daily Mean Discharge
(In cubic feet per second)

CEDAR CREEK AT CEDARVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	7.4	29	23	31	4.9	1.2	0.59	1
2	7.9	29	26	29	4.5	1.1	0.58	2
3	8.7	26	28	27	3.9	1.1	0.53	3
4	10	22	30	25	3.6	1.0	0.47	4
5	9.7	19	29	21	3.3	0.98	0.42	5
6	9.3	17	29	21	3.1	0.90	0.37	6
7	9.4	17	29	21	3.1	0.93	0.34	7
8	10	18	29	19	3.1	1.0	0.36	8
9	11	19	27	18	3.0	0.98	0.40	9
10	15	18	25	19	2.9	0.90	0.39	10
11	19	16	24	16	2.7	0.82	0.36	11
12	16	15	25	14	2.5	0.76	0.34	12
13	38	14	26	13	2.3	0.84	0.31	13
14	27	13	29	12	2.2	0.91	0.29	14
15	22	13	32	12	2.2	0.73	0.28	15
16	19	15	31	11	2.2	0.71	0.26	16
17	17	17	32	10	2.2	0.73	0.24	17
18	15	21	35	9.5	2.0	0.73	0.22	18
19	12	25	37	8.4	2.0	1.5	0.31	19
20	11	27	40	7.9	1.9	1.2	0.43	20
21	10	31	44	7.4	1.8	0.99	0.36	21
22	9.9	31	44	7.0	1.7	0.99	0.40	22
23	9.4	28	46	6.6	1.6	0.91	0.49	23
24	9.2	25	48	6.2	1.6	0.94	0.44	24
25	8.9	23	45	5.8	1.5	0.84	0.38	25
26	8.8	22	43	5.7	1.6	0.71	0.77	26
27	8.7	20	41	5.4	1.6	0.64	1.7	27
28	8.5	20	41	5.0	1.4	0.58	0.61	28
29	8.7	20	41	4.6	1.3	0.57	0.53	29
30	21	21	39	4.3	1.5	0.53	0.50	30
31	38		34		1.3	0.54		31
MEAN	14	21	33.9	13.4	2.4	0.9	0.5	MEAN
AC-FT	860	1250	2090	800	150	50	30	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 96

1983 Daily Mean Discharge
(In cubic feet per second)

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		10	6.5	26	3.3	1.0	0.4	1
2		9.8	6.4	24	3.2	1.0	0.4	2
3		9.6	6.3	22	3.2	1.0	0.4	3
4		9.4	6.3	21	3.1	0.9	0.5	4
5		9.2	6.2	21	3.1	0.9	0.5	5
6		9.0	6.0	20	3.0	0.9	0.5	6
7		8.8	5.9	20	3.0	0.9	0.5	7
8		8.6	5.8	19	2.9	0.8	0.5	8
9		8.4	5.7	18	2.9	0.8	0.5	9
10		8.2	5.6	18	2.8	0.8	0.5	10
11		8.0	5.5	15	2.7	0.8	0.5	11
12		8.0	6.0	13	2.6	0.7	0.5	12
13		8.0	6.6	12	2.5	0.7	0.5	13
14		7.9	7.8	10	2.2	0.7	0.4	14
15		7.8	9.0	9.7	2.0	0.7	0.4	15
16		7.8	9.4	9.3	1.7	0.6	0.4	16
17		7.6	9.6	9.0	1.7	0.6	0.4	17
18		7.6	9.7	8.6	1.6	0.6	0.4	18
19		7.8	11	8.1	1.5	0.6	0.4	19
20		7.8	13	7.7	1.5	0.6	0.4	20
21		7.9	15	7.0	1.4	0.5	0.4	21
22		8.0	17	6.3	1.4	0.5	0.4	22
23		8.0	19	5.7	1.4	0.5	0.4	23
24		8.0	24	5.0	1.3	0.5	0.4	24
25		7.6	26	4.6	1.3	0.5	0.4	25
26		7.4	28	4.1	1.3	0.5	0.4	26
27		7.2	29	3.7	1.3	0.4	0.4	27
28		7.0	30	3.5	1.2	0.4	0.4	28
29		6.8	31*	3.4	1.2	0.4	0.4	29
30		6.6	28	3.3	1.1	0.4	0.4	30
31			27		1.1	0.4		31
MEAN		8.2	13.6	11.9	1.8	0.7	0.4	MEAN
AC-FT		486	838	710	109	41	26	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 97

1983 Daily Mean Discharge
(In cubic feet per second)

SOUTH DEEP CREEK BELOW NO. 2 DIVERSION

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		7.6	6.4	15	3.4	1.0	0.6	1
2		7.4	6.0	8.9	3.4	1.0	0.6	2
3		7.2	6.2	7.0	3.2	1.0	0.6	3
4		7.2	6.4	6.9	3.2	0.9	0.6	4
5		6.9	6.6	6.7	3.1	0.9	0.6	5
6		6.8	6.8	6.5	3.1	0.9	0.6	6
7		6.4	7.1	6.3	3.0	0.8	0.6	7
8		6.0	7.3	6.1	2.9	0.8	0.6	8
9		5.8	7.5	5.9	2.9	0.8	0.6	9
10		5.6	7.7	5.7	2.8	0.8	0.6	10
11		5.5	7.9	5.6	2.7	0.8	0.6	11
12		6.0	8.0	5.5	2.6	0.7	0.6	12
13		6.2	8.1	5.4	2.6	0.7	0.6	13
14		6.6	8.6	5.3	2.5	0.7	0.6	14
15		6.7	9.4	5.2	2.4	0.7	0.6	15
16		6.8	10	5.1	2.4	0.6	0.6	16
17		6.9	10	5.0	2.3	0.6	0.7	17
18		7.0	11	4.9	2.2	0.6	0.8	18
19		7.2	11	4.8	2.1	0.6	0.7	19
20		7.8	12	4.7	2.0	0.6	0.7	20
21		8.0	12	4.5	1.8	0.6	0.6	21
22		8.0	13	4.4	1.5	0.6	0.6	22
23		8.0	28	4.3	1.3	0.6	0.6	23
24		8.0	33	4.2	1.3	0.6	0.6	24
25		8.0	41	4.1	1.2	0.6	0.6	25
26		8.0	45	4.1	1.2	0.6	0.6	26
27		8.0	45	4.0	1.2	0.6	0.6	27
28		8.0	30	4.0	1.1	0.6	0.6	28
29		7.9	28	3.7	1.1	0.6	0.5	29
30		7.8	26	3.5	1.1	0.6	0.5	30
31			18		1.0	0.6		31
MEAN		7.1	15.6	5.6	2.2	0.7	0.6	MEAN
AC-FT		423	958	332	136	43	17	AC-FT

SURPRISE VALLEY WATERMASTER AREA

TABLE 98

1983 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK FLUME BELOW PAGE DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		3.0	7.2		30	7.8	3.5	1
2		3.2	7.2		30	7.6	3.4	2
3		3.4	7.0	41	30	7.5	3.3	3
4		3.6	7.1		29	7.3	3.2	4
5		3.8	7.1		30	7.1	3.1	5
6		4.0	7.2		30	6.9	3.0	6
7		4.1	7.2		30	6.8	2.9	7
8		4.3	7.4		29	6.6	2.8	8
9		4.5	7.8		28	6.4	2.6	9
10		4.7	8.1		26	6.2	2.4	10
11		4.9	8.6		25	6.0	2.3	11
12		5.1	9.2		24	5.9	2.2	12
13		5.4	9.5		23	5.7	2.2	13
14		5.6	10		21	5.5	2.2	14
15		5.8	12	67	20	5.3	2.2	15
16		6.1	12	64	19	5.2	2.2	16
17		6.3	19	61	18	5.0	2.1	17
18		6.6	26	58	17	4.8	2.1	18
19		6.8	32	56	16	4.6	2.1	19
20		7.0	39	51	14	4.4	2.1	20
21		7.3	41	48	13	4.3	2.1	21
22		7.5	46	41	12	4.1	2.0	22
23		7.8	48	33	11	3.9	2.0	23
24		7.6	50	32	9.6	3.7	2.1	24
25		7.6	57	32	8.4	3.6	2.1	25
26		7.5		31	8.3	3.5	2.0	26
27		7.5		31	8.2	3.5	2.0	27
28		7.5		31	8.2	3.6	2.0	28
29		7.4		31	8.0	3.6	2.0	29
30		7.3		30	8.0	3.5	2.0	30
31					8.0	3.5		31
MEAN		5.8			19.1	5.3	2.4	MEAN
AC-FT		939			1174	324	143	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 99

1983 Daily Mean Discharge
(In cubic feet per second)

OWL CREEK BELOW ALLEN-ARRECHE DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
MEAN								MEAN
AC-FT								AC-FT

NO RECORD FOR 1983

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 100

1983 Daily Mean Discharge
(In cubic feet per second)

RADER CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
MEAN								MEAN
AC-FT								AC-FT

NO RECORD FOR 1983

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 101

1983 Daily Mean Discharge
(In cubic feet per second)

EAGLE CREEK NEAR EAGLEVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	2.6	6.0	4.4		39	16	7.6	1
2	3.0	6.0	4.8		40	16	7.5	2
3	2.8	5.3	5.8		37	16	7.4	3
4	2.8	5.0	7.0		35	15	7.1	4
5	2.8	4.8	7.1		36	14	6.9	5
6	2.5	4.6	6.4		38	13	6.7	6
7	2.2	4.5	6.8		37	13	6.6	7
8	2.4	4.8	6.9		31	13	6.6	8
9	4.1	4.9	6.3		27	12	6.7	9
10	5.7	4.7	6.0		24	12	6.6	10
11	6.1	4.3	5.9		24	12	6.4	11
12	6.3	4.1	6.4		25	12	5.9	12
13	11	3.9	7.2		29	11	5.5	13
14	8.3	3.6	9.3		34	12	5.5	14
15	7.2	3.5	12		30	11	5.4	15
16	6.5	3.9	11		26	11	5.3	16
17	6.1	4.6	13		24	9.9	5.3	17
18	5.6	5.3	17		22	9.7	5.3	18
19	5.2	5.9	19		21	11	5.3	19
20	4.9	6.2	23		20	11	5.3	20
21	5.0	6.8	28		20	9.9	5.3	21
22	4.8	6.8	31		20	9.6	5.3	22
23	4.6	6.2			20	9.2	5.4	23
24	4.5	5.8			19	8.9	5.3	24
25	4.3	5.2			18	9.1	5.1	25
26	4.2	4.8			18	9.2	5.1	26
27	4.2	4.6			17	8.9	5.1	27
28	4.1	4.6		34	17	8.5	5.1	28
29	4.1	4.4		36	17	8.2	5.1	29
30	5.6	4.4		35	17	7.8	5.1	30
31	7.1				17	7.7		31
MEAN	4.9	5			25.8	11.2	5.9	MEAN
AC-FT	300	300			1580	690	350	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 102

1983 Daily Mean Discharge
(In cubic feet per second)

EMERSON CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	7.7	8.4	13	96	27		4.2	1
2	6.6	8.5	13	90	26		4.1	2
3	6.4	7.8	15	81	23		4.0	3
4	5.7	7.4	17	74	21		3.9	4
5	5.5	6.8	19	69	20		3.8	5
6	4.8	6.7	16	56	20		3.7	6
7	4.7	6.9	16	62			3.7	7
8	5.1	7.5	17	76			3.6	8
9	6.9	7.7	15	84			3.8	9
10	9.1	7.6	14	91			3.7	10
11	11	7.3	14	70			3.6	11
12	11	7.1	14	50			3.6	12
13	28	6.7	16	40			3.5	13
14	16	6.4	20	35			3.5	14
15	12	6.3	29	35			3.5	15
16	11	6.8	28	35			3.4	16
17	11	7.7	31	41			3.4	17
18	9.4	10	37	39			3.4	18
19	8.1	12	41	35			3.5	19
20	7.4	14	53	33			3.5	20
21	7.1	15	63	31			3.5	21
22	6.6	16	67	31			3.6	22
23	6.1	15	76	30			4.1	23
24	6.3	14	86	31			4.1	24
25	6.0	14	82	29		4.3	3.9	25
26	5.4	13	75	28		4.4	3.9	26
27	5.4	12	106	27		4.3	4.0	27
28	5.0	12	86	26		4.2	3.9	28
29	5.3	12	121	25		4.1	3.9	29
30	8.3	12	147	24		4.0	4.0	30
31	9.9		82			4.2		31
MEAN	8.3	9.8	46.1	49.1			3.7	MEAN
AC-FT	510	580	2830	2920			220	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA

The Susan River service area is in southern Lassen County near Susanville. The main area of water use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a stretch of about 25 miles. The valley floor is at an elevation of about 4,000 feet. Water comes from three stream systems: Susan River, Baxter Creek, Parker Creek, and their respective tributaries.

The Susan River originates on the east slope of the Sierra Nevada just east of Lassen National Park at an elevation of about 7,900 feet. It runs east from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

The river has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen Creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen Creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow Creeks are on the south slopes of Round Valley Mountain at lower elevations.

A short distance below its confluence with Willow Creek, the Susan River divides into three channels: Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank, further downstream.

The Baxter Creek stream system is in Honey Lake Valley on the east side of the Sierra Nevada, about 10 miles southeast of Susanville. The main creeks in the system are Baxter Creek, which rises on the west side of the basin and flows east, and Elesian, Sloss, and Bankhead Creeks, tributaries of Baxter Creek from the south.

Parker Creek is also in Honey Lake Valley on the east slope of the Sierra Nevada, about 15 miles southeast of Susanville. It rises on the east side of Diamond Mountain and flows east for about 5 miles into Honey Lake.

Maps of the Susan River service area, showing the stream systems, diversions, etc., are presented as Figures 16 through 16f, pages 211 through 223.

Basis of Service

The waters of Susan River and its tributaries are distributed according to the water rights defined in Decree No. 4573, Lassen County Superior Court, entered on April 18, 1940. Schedule 3 of the decree defines the rights to the use of water from Willow Creek in Willow Creek Valley, Lower Willow Creek, and the Susan River delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run, Piute, Hills, Holtzclaw, and Lassen Creeks above their confluence with the Susan River. Schedules 5 and 6 of the decree defines the rights to the use of water from the Susan River, exclusive of its tributaries. The decree establishes three priority classes each on Susan River and Gold Run Creek, two on Willow Creek, and one each on Piute and Hills Creeks.

The water of Baxter Creek and its tributaries is distributed according to the water rights defined in the statutory adjudication as set forth in Decree No. 8174, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Sloss and Bankhead Creeks and Schedule 4 the rights to the use of water from Baxter and Elesian Creeks. The Baxter Creek rights are divided into five priority classes.

The water of Parker Creek and its tributaries is distributed according to the water rights defined by a statutory adjudication as set forth in Decree No. 8175, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Parker Creek, with four priority classes.

The Susan River watermaster service area was created by order of the Division of Water Resources on November 10, 1941. The Baxter and Parker Creek stream systems were added to the Susan River service area on February 16, 1956.

Water Supply

Water in the Susan River service area comes from two major sources: snowmelt runoff and springs. Snowpack on the Willow Creek Valley and Piute Creek watersheds, which embrace more than half the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this part of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen Gold Run, Baxter, and Parker Creeks and the Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

The Lassen Irrigation Company stores supplemental water in Hog Flat and McCoy Flat Reservoirs, on the headwaters of the Susan River. This stored water is released into the Susan River Channel and joins the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation company.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 109 through 115, pages 224 through 227.

Method of Distribution

Irrigation in the Susan River service area is done by putting dams in the main channels, thus raising the water level for later diversion into canals and ditches. These diversion dams are relatively large on the Susan River Channel and generally much smaller on the various creeks. Wild flooding is the most common method of irrigation. Part of the irrigated lands have been leveled, permitting more efficient use of water by using border checks and furrows. Subirrigation occurs in some areas as a result of surface irrigation, or as a result of seepage from ditches and creek channels.

The Lassen Irrigation Company is allowed to use its three reservoirs (McCoy Flat, Hog Flat and Lake Leavitt) to store water as follows: (a) between March 1 and July 1 when the flow in the river just above its confluence with Willow Creek is more than 20 cfs, and (b) at all other times when the flow at the same point is 5 cfs in spite of the allotments outlined in Schedules 3 and 6, and users of third priority class in Schedule 5 of the Susan River decree.

1983 Distribution

Watermaster service began in the Susan River service area on March 28 and continued until October 1. Virgil Buechler, Water Resources Engineering Associate, was watermaster.

The water supply throughout the service area was the wettest of record. McCoy Flat and Hog Flat Reservoirs and Lake Leavitt spilled. The hay crops, due to the precipitation and climate, provided record-breaking harvests on both irrigated and nonirrigated land. Outside rangeland was in excellent condition.

Parker Creek

First priority water rights were served through July and then rapidly diminished to a spring-fed trickle for the uppermost users by July 4.

Baxter Creek

Baxter Creek runoff was about normal, mainly because the decomposed granite of the Diamond Mountains absorbed much of the runoff. The flows were sufficient to supply all priorities through June but decreased very rapidly. When the snowpack was gone, all flows, including the Long Ditch, fell to zero by July 30.

Lassen-Holtzclaw Creeks

The water supply was sufficient to meet both priorities through July. From August 1 through the rest of the season, the Tangeman Ranch was entitled to all water available in the stream, which was less than their 4 cfs first priority.

Hills Creek

The water supply in Hills Creek was sufficient to satisfy all allotments until July 4. Ellena and Warren set a rotation on their ditch. All storage allotments were filled and Emerson Lake started releases the first of August and continued through September.

Gold Run Creek

The water supply in Gold Run Creek was sufficient for third priority water until August 27 and then the creek leveled off at 3 to 4 cfs for the rest of the season.

Piute Creek

The water supply, which is spring fed, was sufficient to satisfy all allotments during the year, with some surplus into the Susan River.

Willow Creek

The flow in Willow Creek was enough to supply all allotments throughout the season. The surplus flows and the springs below Willow Creek Valley have increased from last year.

Susan River

There was enough water in the Susan River to fill all of the allotments of Schedule 6. The A & B Canal users got their Schedule 5 second priority for most of the season. The Susan River flows satisfied all schedules through July 20, with some water stored in Lake Leavitt.

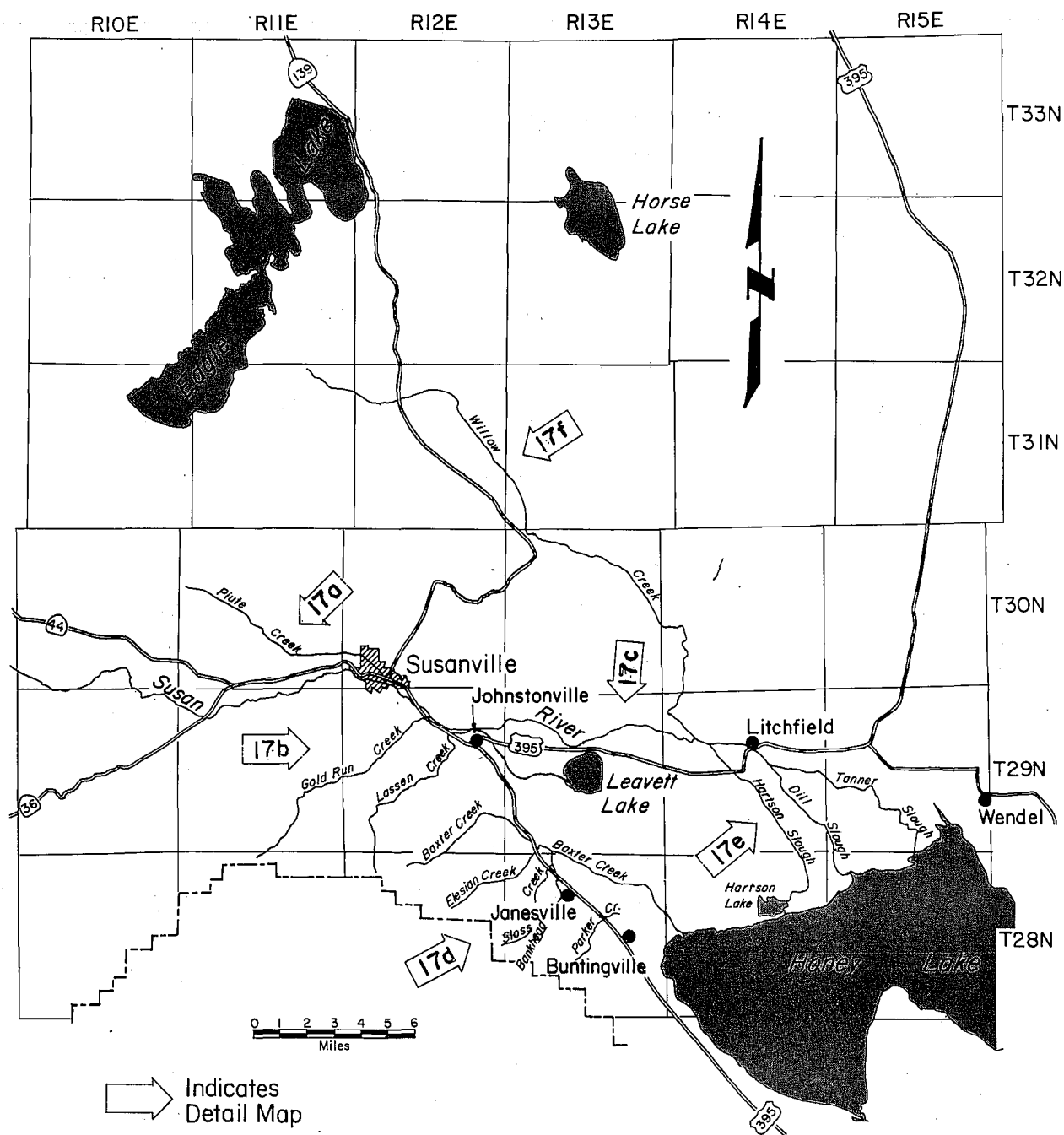
Lassen Irrigation Company Reservoirs

McCoy Reservoir filled to capacity by May 10. It shut down September 6 with 8,000 cfs left in storage. Hog Flat spilled and was emptied into Lake Leavitt by September 11. Lake Leavitt reached capacity by March 15 and was shut down on September 15 with very little storage left. Lassen Irrigation company used 20,000+ acre-feet this season.

Lower Susan River

Schedule 3 averaged 20 cfs the entire season, which satisfied all of the first and second priorities. Most of this water was supplied by excess flows in Willow Creek and return flows from Lassen Irrigation District Irrigations, Gold Run Creek, Piute Creek, and Lassen Creek.

Figure 17



INDEX MAP SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 103

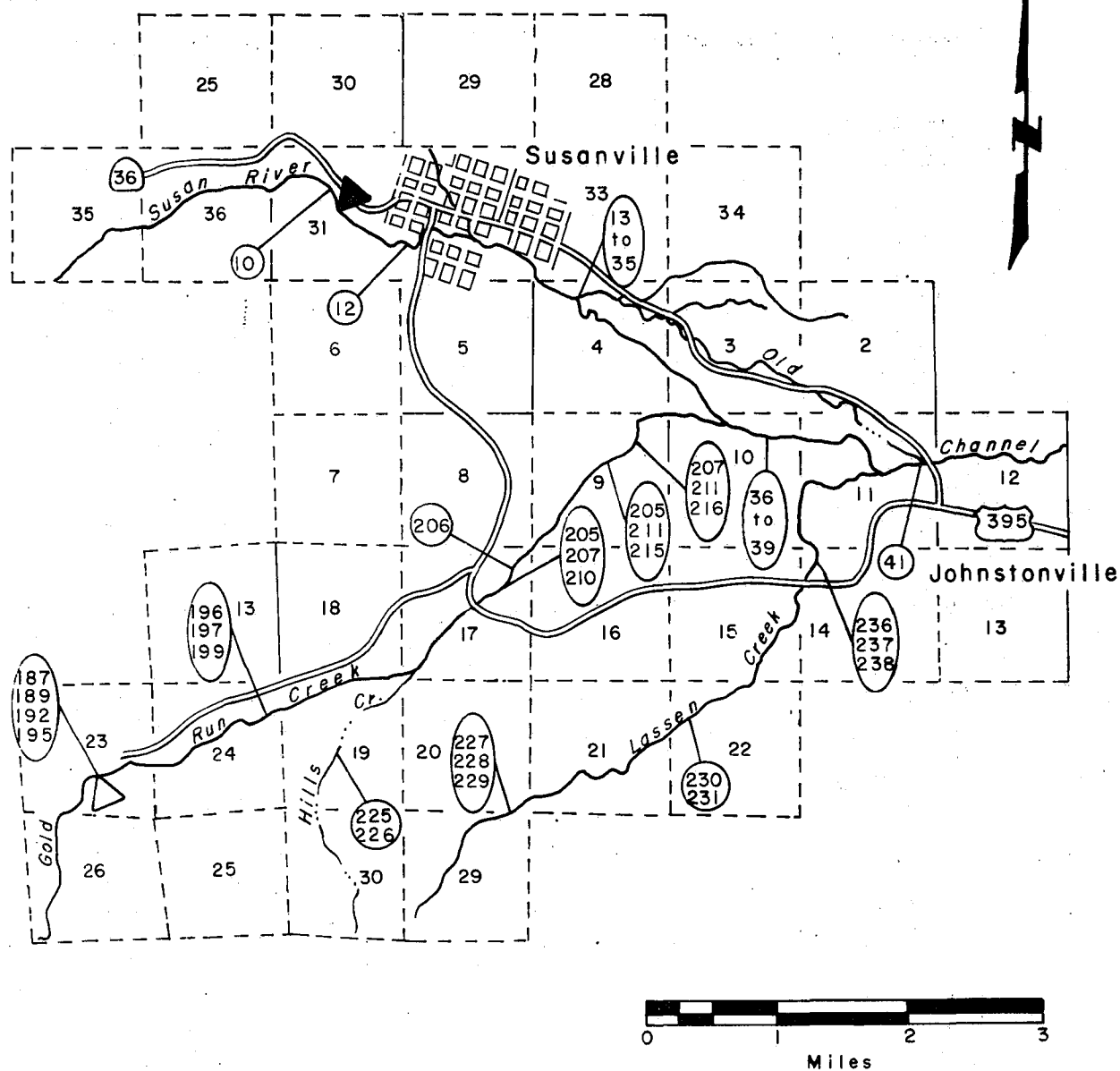
DIVERSIONS FROM SUSAN RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
10	Ramsey Ditch	6.40
12	Federal Government Sv. Ditch	3.26
13-35	Old Channel	17.10
36-39	Lassen 7-D Ranch Inc.	4.85
41	Occidental et al	16.00 ^{1/}
187,189 192,195	Satica Ditch	3.85
196,197 199	Sella Ditch	2.62
205,207 210	Satica	3.60
205,211 215	Pyle	4.90
206	Mallery	^{2/}
207,211 216,219	Lassen 7-D Ranch Inc.	3.85
207,211 216,219	Mallery	3.80
220	Emerson Hills Ditch	3.85
225-226	Nagle	2.45
227-229	Tangeman	4.60
230-231	Mallery	2.70
230,240	Lassen 7-D Ranch Inc.	2.70

^{1/} Does not include Lassen I. D. water rights to Lake Leavitt.

^{2/} 48 Percent of Gold Run Creek at 206.

Figure 17a



Permanent recorder station.

Watermaster — installed recorder station.

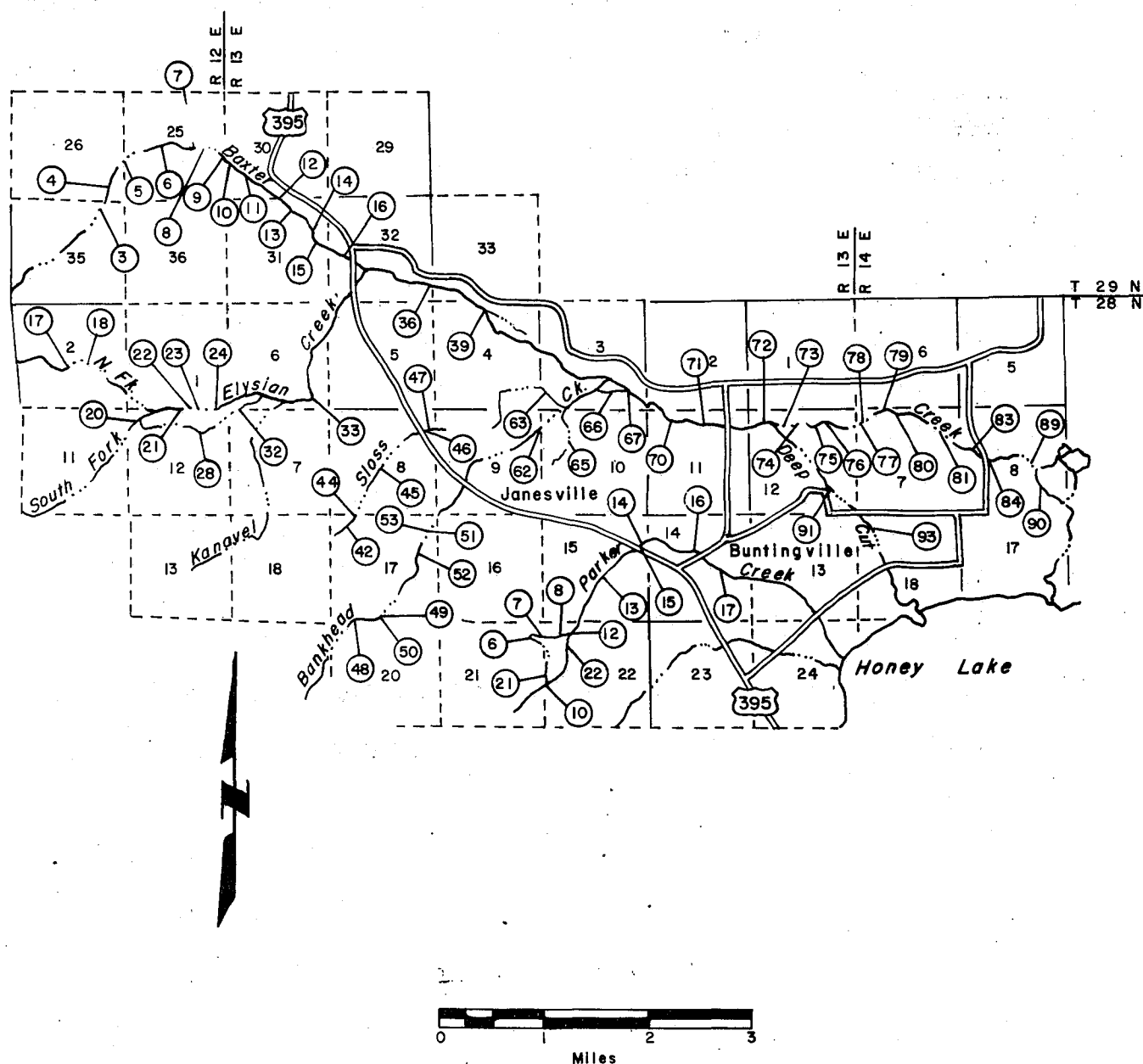
DIVERSIONS FROM SUSAN RIVER, SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 104

DIVERSION FROM BAXTER, ELESIAN, SLOSS, BANKHEAD, AND PARKER CREEKS

<u>Baxter and Elesian Creeks</u>		
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
3-5	Dickson	2.50
6-8,12	Gray Eagle Corp.	0.88
11	Burnett, Baker	0.20
8-10,12	Mallery	3.23
8,12-16	Mallery	3.49
16	Gray Eagle Corp.	0.52
17-18	Faith Ranch	0.16
20	Bailey	1.71
17,21,26-27	Bass	4.10
17,22-24,28,32-33	Smith	2.82
17,22-24,28,32-33	Kanaval	4.58
36,39	Peterson	1.42
70	Ahern	0.02
71-72	A & K Company	1.71
75,77,79-80	Blickenstaff	0.64
78	U.S. Hertz Inc.	1.05
81,83	Blickenstaff	2.88
73,75	Garza	1.17
74,76	Hemphill	1.96
75,77	Dieter	1.95
75,77,80	Dieter	0.30
77,79	Mulroney	1.80
78	Mulroney	0.67
78	Cummings	0.15
81,83	Blankenship	0.50
84,90	Dow	1.80
85,89	Marsters, McDonald	1.60
<u>Sloss and Bankhead Creeks</u>		
42	Mossman	0.02
44	Doyle	0.002
45	Snipes	0.08
46	Goddard	1.20
46-47	Peterson	1.20
48-50	Row	0.15
51	de Rocher	0.08
52-53,55	White	0.48
56,62	Ashmore	0.53
63,65	Dow	2.83
66-67	Myers	0.26
91,93	Bailey	3.02
<u>Parker Creek</u>		
6-12	Butler	0.89
13-15	Hoffman	3.26
15	Flux	1.38
16-17	Bailey	2.06

Figure 17b



**DIVERSIONS FROM BAXTER CREEK AND PARKER CREEK,
SUSAN RIVER
WATERMASTER SERVICE AREA**

TABLE 105

DIVERSIONS FROM SUSAN RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
56,94,96	Smith et al	3.95
57-58,69 72	Smith	7.50
58-61, 79-81,84	Mapes	13.29
71,75-78	McClelland	10.75
81-83	DeWitt Theodore	1.75 1.88
82,87-89 91-92	Wells	3.75
82,87-89 91-92	DeWitt	3.75
85-86	Calif. Dept. of Fish and Game	19.20
90-92	Calif. Dept. of Fish and Game	2.26
90-92	Brown et al	0.34
97	Tanner	5.00
98,100-101	Dow	5.00
99	Honey Lake Ranch	7.50
102	Honey Lake Ranch	5.45
106,109 111	Roberts	1.10
106,109 111	Tanner	2.55
107-108	Roberts	1.20
110-111	Wolf	1.55
110, 112-114	Calif. Dept. of Fish and Game	3.10

Map of the Litchfield area showing waterways, sloughs, and numbered points of interest. The map includes Willow Creek, Tanner Slough, Flood, Tule Canal, Dill, Whitehead Slough, Hartsoog, and Honey Lake. Numbered points range from 5 to 114. A legend indicates that black triangles represent watermaster-installed recorder stations. The map is overlaid with a grid of Range (R 13 E to R 15 E) and Township (T 28 N to T 29 N) coordinates.



DIVERSIONS FROM SUSAN RIVER, SUSAN RIVER WATERMASTER SERVICE AREA

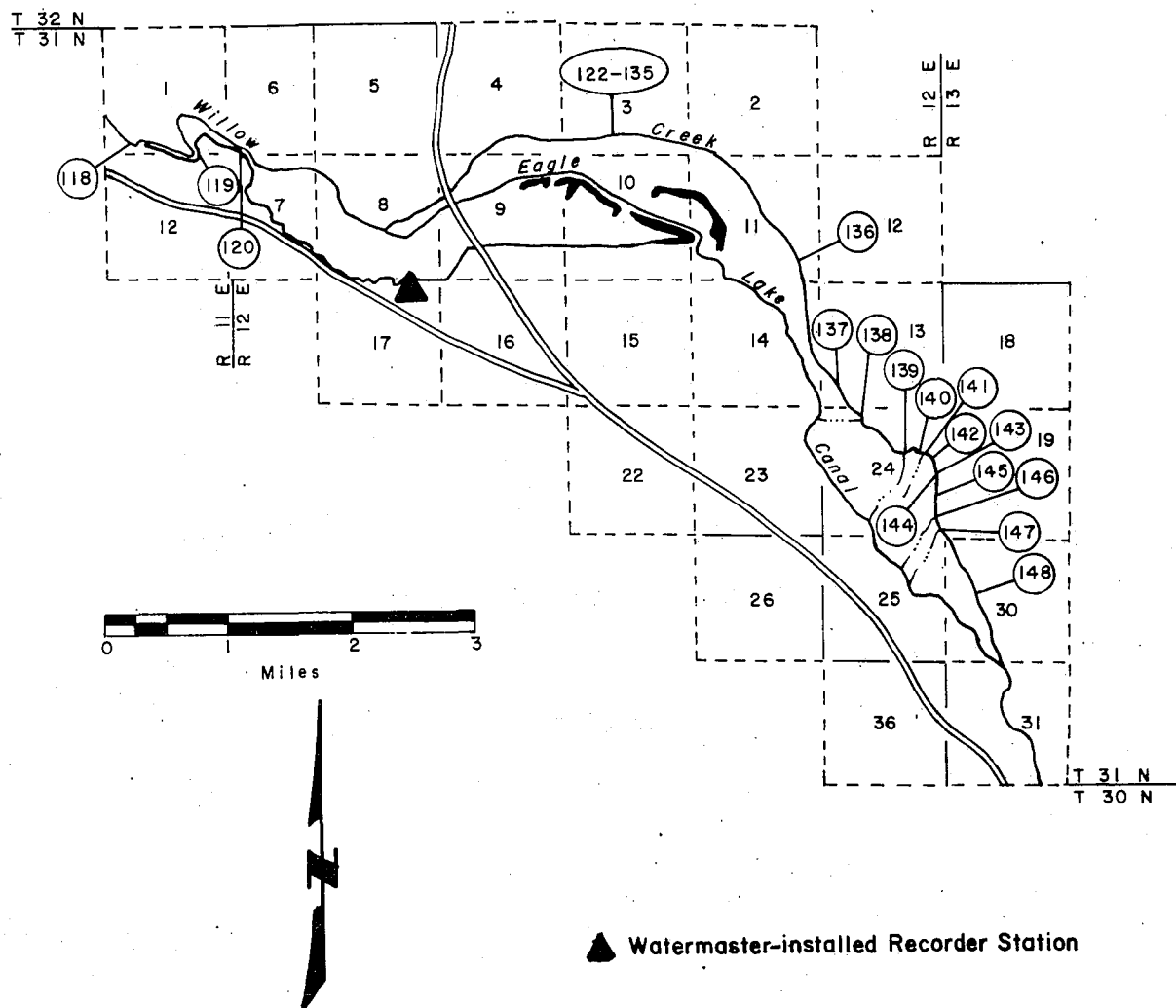
TABLE 106
DIVERSIONS FROM WILLOW CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
118-119	Murrer	2.10
	Barron	2.10
120	Murrer	1.00
122,135	Barron	14.90
136-143, 145	Hansan Ranch	4.90
144-147	Hagata	2.25
147-148	Hagata	1.95

NOTE: Allotments to be measured as the average difference during any seven-day period between the water available for use on the acreage to be supplied and the water passing off the acreage.

The Barron Ranch also diverts from the Old Eagle Lake Canal. It must release to downstream users 38 percent of second priority water available to it over any seven-day period. If deficiency exists, the watermaster obtains required flow by increasing Barron Reservoir releases.

Figure 17d

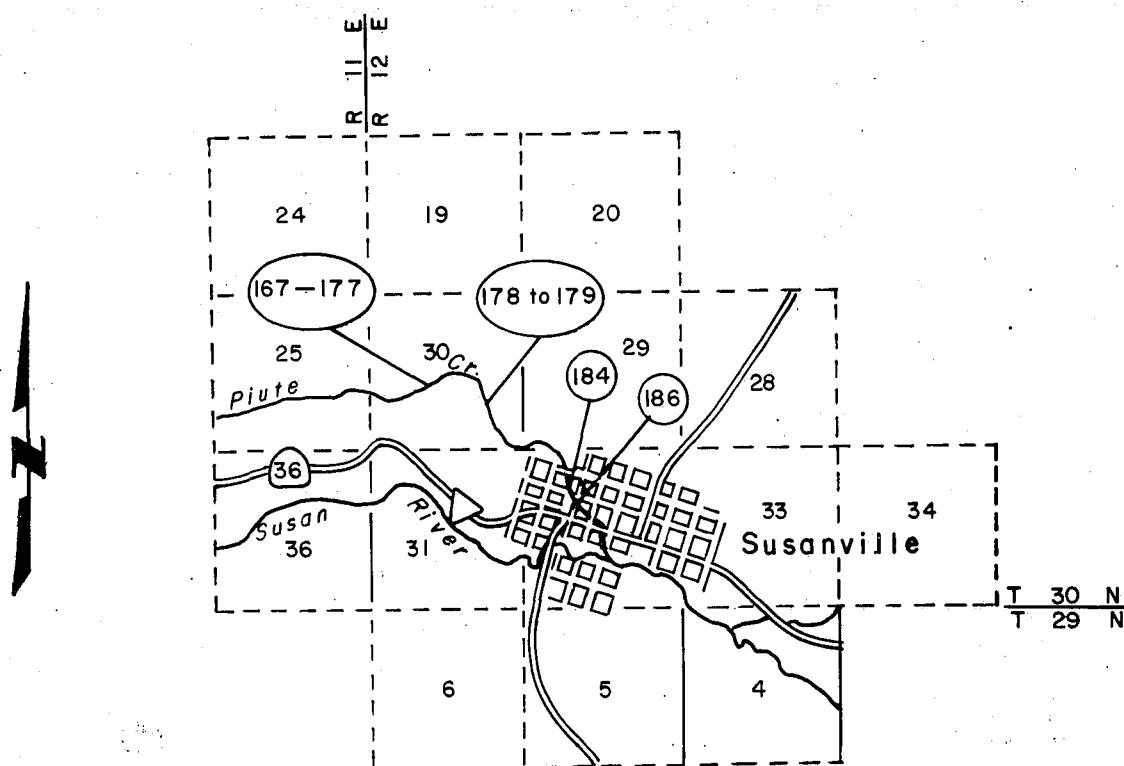


DIVERSIONS FROM WILLOW CREEK, SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 107
DIVERSIONS FROM PIUTE CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
167-177	California Pacific Utility	2.50
178-179	Marmo Ditch	0.16
184	Susanville, City of	0.11
186	Susanville Elementary School	0.07

Figure 17e



△ U.S.G.S. Permanent Recorder Station.

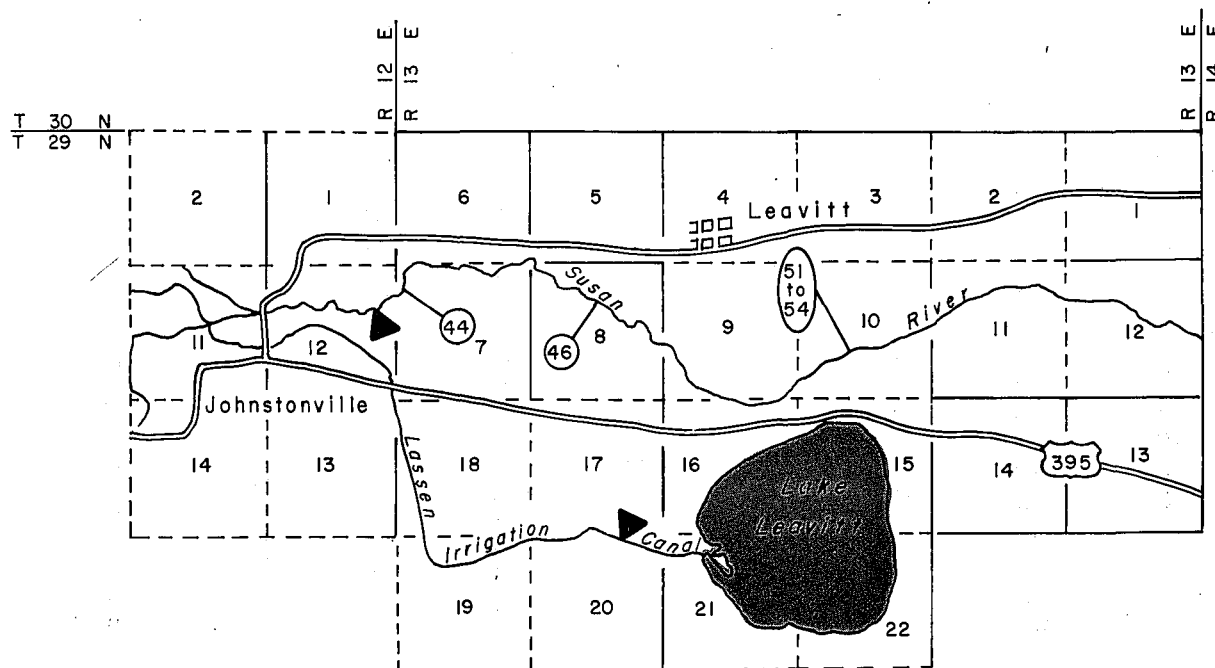


DIVERSIONS FROM PIUTE CREEK, SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 108
DIVERSIONS FROM SUSAN RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
44	Farris-McAllister Dam	7.47
46	Roberts Dam	4.98
51-54	Roberts-Chappius Dam	12.00

Figure 17f



▲ Watermaster — installed recorder station.



DIVERSIONS FROM SUSAN RIVER, SUSAN RIVER WATERMASTER SERVICE AREA

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 109

1983 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	717	298	330	866	131	112	78	1
2	604	301	340	809	140	114	74	2
3	480	270	422	828	134	112	72	3
4	384	243	616	794	130	110	69	4
5	353	224	715	732	123	114	67	5
6	316	212	635	677	113	104	63	6
7	321	212	603	619	103	111	58	7
8	337	232	599	372	94	118	55	8
9	384	248	573	343	89	112	52	9
10	564	236	541	308	81	112	51	10
11	750	222	502	318	72	112	49	11
12	588	209	504	294	65	111	47	12
13	2050	192	523	315	58	109	45	13
14	1010	184	555	331	55	105	42	14
15	658	182	602	367	54	105	41	15
16	497	195	623	383	52	105	32	16
17	408	216	636	365	48	100	20	17
18	348	229	681	345	48	98	15	18
19	301	270	735	327	46	106	14	19
20	283	318	772	301	44	101	16	20
21	275	352	827	283	42	98	18	21
22	256	383	885	261	40	100	18	22
23	232	388	996	243	37	97	23	23
24	230	350	1070	201	35	93	22	24
25	211	323	1040	184	79	91	20	25
26	190	290	1040	179	85	89	20	26
27	186	277	1000	154	85	86	23	27
28	176	310	1010	130	85	84	19	28
29	170	325	1030	125	84	81	19	29
30	218	323	1060	124	82	79	22	30
31	373		952		80	79		31
MEAN	447	267	723	386	77.9	102	38.8	MEAN
AC-FT	27510	15900	44460	22960	4790	6240	2310	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 110

1983 Daily Mean Discharge
(In cubic feet per second)

GOLD RUN CREEK NEAR SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		62	63	76	28	8.0	3.0	1
2		62	65	65	31	8.0	3.0	2
3		58	70	65	33	9.0	3.0	3
4		57	70	68	26	12	3.0	4
5		54	65	68	27	12	2.0	5
6		51	68	61	27	8.0	2.0	6
7		50	68	61	26	10	2.0	7
8		51	65	65	25	10	2.0	8
9	53	57	65	66	23	9.0	2.0	9
10	62	56	69	61	23	9.0	3.0	10
11	70	54	65	65	22	8.0	3.0	11
12	76	51	65	61	21	8.0	2.0	12
13	100	50	65	53	20	8.0	2.0	13
14	85	50	68	52	20	8.0	2.0	14
15	76	48	69	50	20	8.0	2.0	15
16	70	48	70	46	20	8.0	3.0	16
17	67	51	70	46	19	8.0	3.0	17
18	62	57	70	50	18	8.0	3.0	18
19	60	62	70	46	18	8.0	3.0	19
20	58	63	70	42	18	10	3.0	20
21	58	65	70	41	18	10	3.0	21
22	57	67	72	38	17	10	4.0	22
23	55	67	75	37	17	10	4.0	23
24	55	65	75	37	17	9.0	4.0	24
25	51	63	75	36	17	8.0	4.0	25
26	50	62	75	35	17	8.0	3.0	26
27	50	58	75	35	14	1.0	3.0	27
28	49	62	76	34	14	2.0	3.0	28
29	47	62	76	34	10	3.0	3.0	29
30	48	64	76	32	10	3.0	3.0	30
31	65		76		8.0	3.0		31
MEAN	61.9	58.7	70.0	50.9	20.1	7.9	2.7	MEAN
AC-FT	2820	3490	4310	3030	1240	483	162	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 111

1983 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER JOHNSTONVILLE BRIDGE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
MEAN								MEAN
AC-FT								AC-FT

NO RECORD FOR 1983

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 112

1983 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK NEAR SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1	461	124	100	23	11	14	28	1
2	470	115	97	21	12	14	28	2
3	371	108	92	21	12	14	28	3
4	252	102	88	23	12	14	28	4
5	198	93	82	23	12	14	28	5
6	171	87	78	22	13	14	28	6
7	159	83	73	22	13	14	27	7
8	149	80	69	22	12	14	27	8
9	143	76	65	20	12	14	29	9
10	150	72	64	20	12	13	30	10
11	159	68	62	19	12	12	30	11
12	145	67	61	18	14	9.1	27	12
13	391	64	60	18	14	9.0	27	13
14	435	62	59	17	14	9.0	27	14
15	320	58	59	17	13	8.9	27	15
16	244	56	57	16	12	8.9	21	16
17	218	56	57	15	12	8.7	16	17
18	201	57	56	15	14	8.7	16	18
19	174	60	55	14	15	9.0	17	19
20	155	66	55	14	16	9.0	15	20
21	178	67	55	14	15	9.1	17	21
22	172	67	51	14	15	9.5	27	22
23	164	65	45	13	15	9.7	28	23
24	171	67	39	13	15	11	32	24
25	196	75	36	13	15	14	38	25
26	151	77	33	12	15	17	35	26
27	137	76	31	12	15	20	35	27
28	122	93	29	12	15	23	35	28
29	113	101	28	11	15	23	34	29
30	102	100	27	11	15	28	34	30
31	147		25		15	33		31
MEAN	214	78.1	57.7	16.8	13.8	27.3	13.8	MEAN
AC-FT	13130	4650	3550	1000	837	850	1620	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 113

1983 Daily Mean Discharge
(In cubic feet per second)

OPERATION OF MCCOY AND HOG FLAT RESERVOIRS

DAY	McCoy Flat Reservoir Inflow from Susan River		McCoy Flat Reservoir Releases to Susan River					Hog Flat Reservoir Releases to Susan River			DAY
	JUN	JUL	MAY	JUN	JUL	AUG	SEP	JUL	AUG	SEP	
1		70		98	75	35	35		42	25	1
2		100		98	84	32	35		42	24	2
3		74	98	98	85	31	35		43	23	3
4		73	98	98	82	37	35		43	22	4
5		65	98	98	82	28	35		46	21	5
6		58	98	98	70	36	35		49	17	6
7		52	98	96	58	38	35		52	15	7
8		46	98	61	48	38	35		55	13	8
9		41	98	13	42	37	35		57	11	9
10		35	98	21	37	36	35		60	9.0	10
11		33	98	37	34	35	35		57	7.0	11
12		31	98	96	35	35	35		52	5.0	12
13		29	98	120	32	35	35		47	3.0	13
14		28	98		29	35	35		42	1.0	14
15		27	98		26	35	7.0		41	0.0	15
16		25	98		23	35	1.5		40		16
17		21	98		21	35	1.5		39		17
18		47	98		18	35	1.5		38		18
19		16	98		15	35	1.5		37		19
20		13	98		12	35	1.5		36		20
21		11	98	141	11	35	1.5		35		21
22		8.0	98	131	7.0	35	1.5		35		22
23		5.0	98	100	6.0	35	1.5		35		23
24		4.0	98	104	5.0	35	1.5		34		24
25		3.0	98	104	5.0	35	1.5	66	34		25
26	88	2.0	98	80	5.0	35	1.5	62	34		26
27	86	1.0	98	38	5.0	35	1.5	52	33		27
28	79	0	98	63	5.0	35	1.5	49	33		28
29	75		98	64	5.0	35	1.5	47	33		29
30	70		98	65	5.0	35	1.5	45	30		30
31			98		33	35		42	27		31
MEAN	95.4	31.6		109.5	32.3	34.9	17.4	51.9	41.3	13.1	MEAN
AC-FT	4161	1755		6513	1980	2148	1033	720	2540	389	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 114

1983 Daily Mean Discharge
(In cubic feet per second)

A AND B CANAL ABOVE LAKE LEAVITT

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1		1.0	22	114	50	70	49	1
2		1.0	23	119	55	74	55	2
3		1.0	25	114	59	65	58	3
4		1.0		114	56	63	60	4
5		1.0		104	56	69	63	5
6		1.0		108	56	72	52	6
7		1.0		82	54	79	48	7
8		1.0		131	51	72	45	8
9		1.0		150	51	73	42	9
10	1.0	1.0		150	48	72	38	10
11	1.0	1.0		150	44	72	34	11
12	1.0	1.0		150	40	73	32	12
13	1.8	1.0		90	36	73	31	13
14	7.3	1.0		90	35	74	27	14
15	1.0	1.0		100	29	74	29	15
16	1.0	1.0		101	28	76	25	16
17	1.0	1.0		79	29	70	16	17
18	1.0	4.6		68	27	70	13	18
19	1.0	8.9		68	23	67	8.8	19
20	1.0	17		86	15	75	7.9	20
21	1.0	14		86	14	67	7.3	21
22	1.0	15	105	81	11	69	7.3	22
23	1.0	16	120	79	7.3	72	7.3	23
24	1.0	14	125	12	4.0	65		24
25	1.0	22	131	79	14	64		25
26	1.0	25	135	78	15	55		26
27	1.0	22	140	72	15	45		27
28	1.0	25	140	50	29	41		28
29	1.0	22	110	50	22	46		29
30	1.0	22	127	50	24	48	0	30
31	1.0		118		68	49		31
MEAN	4.3	8.1	101.6	95.5	34.4	66.2	32.9	MEAN
AC-FT	88	476	2 20	5682	2116	4069	1500	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 115

1983 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT CHAPPIUS LANE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DAY
1								1
2			4.8			10		2
3			5.0					3
4			5.8					4
5			6.7					5
6								6
7								7
8								8
9								9
10								10
11						10		11
12								12
13								13
14								14
15								15
16						8.0		16
17								17
18								18
19								19
20								20
21						11		21
22								22
23								23
24							14	24
25						10		25
26					12			26
27								27
28								28
29								29
30								30
31								31
MEAN	-	-	-	-	-	-	-	MEAN
AC-FT	-	-	-	-	-	-	-	AC-FT

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